Software version TC3.0
MARCH 2010

Administrator guide

For TANDBERG Quick Set C20/C20 Plus and Profile 42” using C20

What's in this guide?

The top menu bar and the entries in the Table of Contents are all hyperlinks. Just click on them to go to the topic.

We recommend you visit the TANDBERG web site regularly for updated versions of this guide. Go to: http://www.tandberg.com/docs

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Chapter 1

Introduction

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Introduction

You may already be familiar with the administrator guides for the Profile Series and Codec C Series. To help you find the information you need, TANDBERG has split the information into smaller and more accessible parts listed on the right of this page.

The purpose of this document

The purpose of this document is to provide you with information required to administrate your product at an advanced level.

Disclaimers and Notices

The objective of this documentation is to provide the reader with assistance in using and configuring the product. The capabilities of TANDBERG products and other manufacturers' products change over time and so the required configuration may be different from that indicated here. If you have any suggestions for changes to this document, please feed them back to TANDBERG through your TANDBERG Authorized Service Representative.

If you need technical support, please contact your TANDBERG Authorized Service Representative.

The specifications for the product and the information in this Guide are subject to change at any time, without notice, by TANDBERG. Every effort has been made to supply complete and accurate information in this Guide however, TANDBERG assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

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Products covered in this guide

- TANDBERG Profile 42" using C20
- TANDBERG Quick Set C20/C20 Plus

Other documents you might find useful

- ***Video conference room primer guide***
- ***Getting started guide*** for Profile Series, Codec C Series, Quick Set C20
- ***User Guide*** for Profile Series, Codec C Series and Quick Set C20
- ***Administrator guide*** for Profiles using Codec C20 and Quick Set C20
- ***Administrator guide*** for Profiles using Codec C60 and Codec C60/C40
- ***Administrator guide*** for Profiles using Codec C90 and Codec C90
- ***Camera user guide*** for PrecisionHD 1080p/720p
- ***API guides*** for Codec C90, C60, C40
- ***Physical interfaces guides*** for Codec C90, C60, C40
- **Legal and safety *information*** for Profile Series, Codec C Series and Quick Set C20

Download the user documentation

Go to: ▶ http://www.tandberg.com/docs

What's new in this version

The information on this page describes the highlights and main changes in the new version for the C Series line of codecs.

Software release notes

For a complete overview of the news and changes, we recommend reading the TANDBERG TC Software Release Notes (TC3). Go to: ▶ http://www.tandberg.com/docs

User documentation

You may already be familiar with the user guides for the Profile Series, Codec C Series and Quick Set C20. To help you find the information you need, TANDBERG has split the guides into smaller and more accessible parts.

The Administrator Guide has been split into:

- Getting started guide
- Video conference room primer guide
- Camera user guide
- Administrator guide (smaller size)
- Legal and safety information

The User Guides have been merged into one guide:

- User Guide for Profile Series, Codec C Series and Quick Set C20

The user documentation is available from our web site. Select your product from the drop down list to see an overview of the user documnetation for that product.

Go to: ▶ http://www.tandberg.com/docs

New feature and improvements

Configuration profiles

Enhanced usability features with Configuration Profiles. The functionality is available from softkeys when you enter the "Advanced Configuration" menu.

Today's bookings

Systems provisioned by the TANDBERG Management System (TMS) can display today's current bookings in the GUI.

Confirm selection of video output resolution

When changing the output resolution, the system will prompt you and let you keep or cancel the selected resolution. In the event that the monitor doesn't support the new selected resolution, no prompt will be shown; selection will time out and thus the system will revert to the previous resolution.

System information, frame rate indicator

The call status will now include frame rate, thus making it easy to see if you are sending/receiving 30 or 60 frames per second. As this is just an indicator and not a proper frame rate counter, it will not show accurate sent or received frame rate. However you will be able to see if the system is now sending or receiving 60 frames per second.

Autocomplete

When starting to type in a number in the call dialog box, it will now provide matches from recent calls, corporate phonebook and local contacts.

Telephone call icon

A telephone call icon will now be displayed along with the telephone number when combined with a video call or presentation.

Russian Input method

When Cyrillic is selected as input method, Russian can be used as multitap. A Russian version of the remote control will be available at the same time as the TC3.0 release.

Do Not Disturb

A proper icon will now be displayed in the lower right corner, when do not disturb is active. And a text box reminding you that 'Do not disturb' is active will be presented in the middle of the screen, if you have no menus or presentation active.

Do not disturb can be activated by holding down the disconnect key until the Standby dialog box appears.

New menu languages

Finnish, Traditional Chinese, Portuguese Brazilian, Polish, Danish, Dutch

Call rate selection

The soft button to select call rate is now available from the 'Enter contact' field in the call dialog box.

Improved web interface

The web interface lets you:

- Check system info
- Upgrade software and add release and option keys
- Configure the system using the advanced configuration
- Upload custom wallpaper using png format.
- Place calls and see the call status
- Upload Certificates
- Download XML files
- Download system logs

Video enhancements

Optimal Definition Profiles

Each video input can now be configured to allow different optimal definition profiles. You can set the profile level, which tells your system how good lighting you have in your room, and you can set when to prefer 60 frames per second over 30 frames per second.

Overscan compensation

Support for monitor overscan compensation, where both video and GUI will be scaled to support monitors that do not support the ability to display an image in pixel-by-pixel mode.

Video enhancements, *continued...*

New encoding and decoding resolutions

- WUXGA (1920*1200)
- In dual stream Codec C20 is limited to WXGA

Letterbox removal

The system will detect letterboxing or pillar boxing and scale the image to fit the screen. If the system receives a 4/3 image with letterboxing (16/9), it will scale the image to fit the entire screen.

Improved video layout control

It is now possible to configure which layout family to be used as default in any system state. This allows for having default self view on the second monitor for dual monitor systems.

This functionality has to be configured using the API (dataport).

Improved packet loss resilience

The packet loss concealment has been improved, which provides noticeable better performance over previous software versions in packet loss environments.

ClearPath (Experimental mode)

Available in TC3.0 in the Experimental menu as a technology preview, and should only be used for demonstration purposes.

ClearPath is TANDBERG's solution to minimize the negative effects of packet loss in a non-optimal network.

Must be enabled from the API or GUI. See the: Experimental Conference PacketLossResilience configuration.

Multiway

Multiway™ conferencing enables video endpoint users to introduce a 3rd party into an existing call. It can be used in the following situations:

- You want to add someone else to your existing call.
- You are called by a 3rd party while already in a call and you want to include that person in the call.

Camera

With the TC3.0.0 release, the PrecisionHD 1080p camera will automatically be upgraded to camera software release ID40056. Included in this release is:

- Ability to set DHCP to on over Visca.
- Added visca commands for changing integration time manually between 50 and 60Hz. To be used if the camera is not able to detect the power frequency.

System overview

TANDBERG Profile 42" using Codec C20

See the installation sheet for the TANDBERG Profile for instructions on how to install the system.

Codec C20

- Full HD video.
- High resolution data sharing.
- Rich I/O capabilities.

PrecisionHD 1080p camera

Full HD Camera designed for visual communication with:

- 12 x optical zoom.
- Fast and precise pan, tilt and zoom.

Monitor

42" Full HD LCD, 16:9, 1080 x 1920 resolution.

Audio module

Wide band audio module supporting:

- 20 kHz AAC-LD.
- 1 echo canceller.

Audio amplifier

Optimized DNAM for TANDBERG Profile providing crystal clear and natural audio.

Microphones

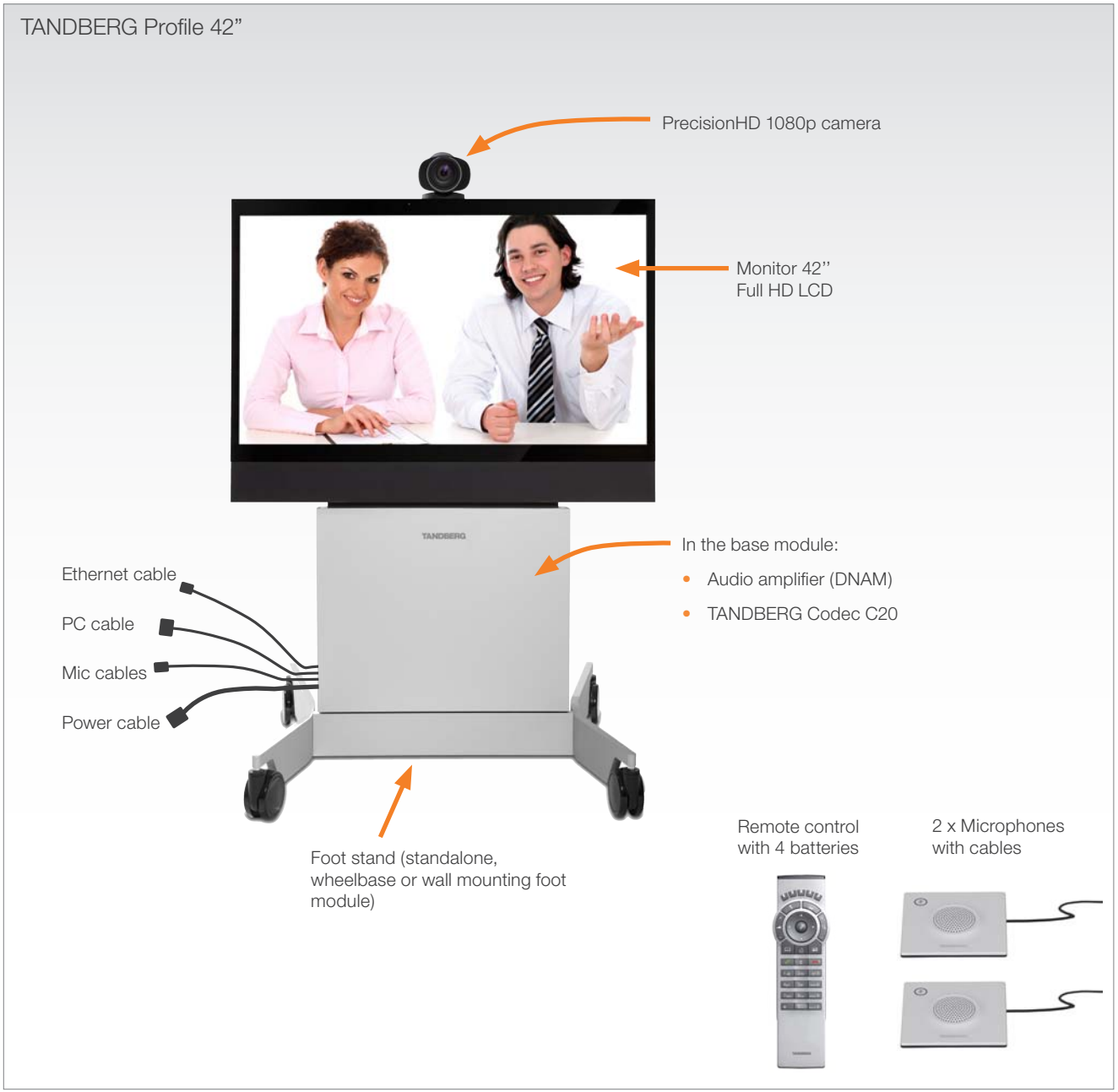
2 x Microphones.

Remote control

TANDBERG Remote Control TRC5, with AAA batteries.

Foot stand

Standalone, wheelbase or wall mounting foot stand.



System overview

The Quick Set C20 packs the rich user experience of larger systems into a compact room based solution. TANDBERG Quick Set C20 is a high definition video collaboration system that has options for 1080p30 or 720p60 resolution, while being easy to deploy, simple to manage and intuitive to use. The TANDBERG Quick Set C20 is uniquely positioned to enable small scale deployment of a first time video solution, as well as allowing the enterprise scale an existing video conferencing solution to hundreds of locations throughout the entire organization.

TANDBERG Quick Set C20/C20 Plus

Never before has the absolute quality of 1080p HD video been so accessible. The Quick Set C20 represents the first time a video solution with this quality and ease of use is available at a price point suited for small teams and those just starting out with video.

TANDBERG Quick Set C20

The TANDBERG Quick Set C20 includes a TANDBERG Codec C20, PrecisionHD 1080p 4X zoom camera, Performance Mic 20 and remote control. Simply add to any HD display and be ready to meet.

TANDBERG Quick Set C20plus

The TANDBERG Quick Set C20 includes a TANDBERG Codec C20, PrecisionHD 1080p 12X zoom camera, Performance Mic 20 and remote control. Simply add to any HD display and be ready to meet.

Design features

- Transforms a flat panel display into a 1080p high definition meeting space
- Simple, intuitive connections make setup as easy as connecting a DVD player
- Quick Set C20 provides up to 1080p30 resolution with a 4x zoom camera
- Quick Set C20Plus provides up to 1080p30 and 720p60 resolution with a 12x zoom camera
- Standards-compliant 1080p solution — compatible with standards-based video without loss of features
- Sleek, compact design

Application features

- Share multimedia and presentations at the touch of a button
- Basic API available over IP (Telnet or SSH)
- Dual-display option available
- HD content sharing with 720p and WXGA

Performance features

- Optimal definition up to 1080p30
- H.323/SIP up to 6 Mbps
- Takes advantage of the TANDBERG Total Solution for Management, including Multiway, recording and streaming and firewall traversal services

Chapter 2

Advanced configuration settings

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Description of the advanced configuration settings

In the following pages you will find a complete list of the system settings which are configured from the Advanced configuration menu. Open the Home menu on screen and go to: Settings > Advanced > Advanced configuration. The examples shows either the default value or an example of a value.

The Audio settings

Audio SoundsAndAlerts KeyTones Mode

The system can produce a sound every time a key on the remote control is pressed.

Valuespace: <On/Off>

On: There will be a sound indicator when pressing keys on the remote control.

Off: The key tone on the remote control is switched off.

```
Example: Audio SoundsAndAlerts KeyTones Mode: Off
```

Audio SoundsAndAlerts RingTone

Selects the ringtone for incoming calls.

Valuespace: <Marbles/IceCrystalsapi-exampleolaris/Alert/Discrete/Fantasy/Jazz/Nordic/Echo/Rhythmic>

Range: Select a tone from the list of ringtones.

```
Example: Audio SoundsAndAlerts RingTone: Jazz
```

Audio SoundsAndAlerts RingVolume

Sets the ring tone volume for an incoming call in steps of 0.5dB, from -34.5dB to 15dB.

Valuespace: <0..100>

Select a value between 1 and 100. Volume 0 = Off.

```
Example: Audio SoundsAndAlerts RingVolume: 50
```

Audio Volume

Sets the volume level on the loudspeaker output in steps of 0.5dB, from -34.5dB to 15dB.

Valuespace: <0..100>

Select a value between 1 and 100. Volume 0 = Off.

```
Example: Audio Volume: 70
```

The Camera settings

Cameras PowerLine Frequency

Applies to cameras supporting PowerLine frequency anti-flickering, i.e PrecisionHD 1080p cameras.

Valuespace: <Auto/50Hz/60Hz>

Auto: Set to Auto to enable power frequency auto detection in the camera.

50Hz, 60Hz: Set to 50Hz or 60Hz.

```
Example: Cameras PowerLine Frequency: Auto
```

Cameras Camera [1..1] Backlight

Backlight is used to compensate for lights shining directly at the camera (usually the sun entering the window) to avoid a too dark image from the room.

Valuespace: <On/Off>

On: Set to On to turn on the backlight compensation.

Off: Set to Off to turn the backlight compensation off.

```
Example: Cameras Camera 1 Backlight: Off
```

Cameras Camera [1..1] Brightness Level

Define the Brightness Level for the camera. Requires the Brightness Mode to be set to manual.

Valuespace: <1..31>

Select a value between 1 and 31.

```
Example: Cameras Camera 1 Brightness Level: 1
```

Cameras Camera [1..1] Brightness Mode

Define whether to control the camera brightness manually or to have it automatically adjusted by the system.

Valuespace: <Auto/Manual>

Auto: When set to Auto, the camera brightness is automatically set by the system.

Manual: Set to Manual to enable manual control of the camera brightness, e.g. the level of the brightness level setting will be used for the camera.

```
Example: Cameras Camera 1 Brightness Mode: Auto
```

The Camera settings, *cont...*

Cameras Camera [1..1] Flip

With Flip mode (vertical flip) you can flip the image upside down.

Valuespace: <Auto/On/Off>

Auto: When the camera is placed upside down the image is automatically flipped upside down. Use this setting with cameras that can be mounted upside down, and that can auto detect that the camera is mounted upside down.

On: When set to On the video on screen is flipped. This setting is used with cameras that can be mounted upside down, but cannot auto detect that the camera is mounted upside down.

Off: Set to Off to display the video on screen the normal way.

```
Example: Cameras Camera 1 Flip: Off
```

Cameras Camera [1..1] Focus Mode

Determines whether the camera should be in auto focus or manual focus mode.

Valuespace: <Auto/Manual>

Auto: When set to Auto the focus will be updated throughout the call. When moving the camera, the system will use auto focus for a few seconds to set the right focus of the new camera position. After a few seconds auto focus is turned off to prevent continuous focus adjustments of the camera.

Manual: If set to Manual the focus is adjusted manually.

```
Example: Cameras Camera 1 Focus Mode: Auto
```

Cameras Camera [1..1] Gamma Level

By setting the Gamma Level you can select which gamma correction table to use. This setting may be useful in difficult lighting conditions, where changes to the brightness setting does not provide satisfactory results. Requires the Gamma Mode to be set to Manual.

Valuespace: <0..7>

Select a value between 0 and 7.

```
Example: Cameras Camera 1 Gamma Level: 0
```

Cameras Camera [1..1] Gamma Mode

Applies to cameras which supports Gamma mode. The Gamma Mode setting enables for gamma corrections. Gamma describes the nonlinear relationship between image pixels and monitor brightness. The TANDBERG PrecisionHD 720p camera supports Gamma Mode. Not supported on TANDBERG PrecisionHD 1080p camera.

Valuespace: <Auto/Manual>

Auto: Auto is the default and the recommended setting.

Manual: In severe light conditions, you may switch mode to manual and specify explicitly which gamma table to use by setting the Gamma Level.

```
Example: Cameras Camera 1 Gamma Mode: Auto
```

The Camera settings, *cont...*

Cameras Camera [1..1] IrSensor

The Camera IR setting determines whether the infrared receiver at the camera should be enabled or not. The IR sensor LED is located in the front of the camera and flickers when the IR sensor is activated from the remote control.

Valuespace: <On/Off>

On: Set to On to enable the IR sensor on the camera.

Off: Set to Off to disable the IR sensor on the camera.

```
Example: Cameras Camera 1 IrSensor: On
```

Cameras Camera [1..1] Mirror

With Mirror mode (horizontal flip) you can mirror the image on screen.

Valuespace: <Auto/On/Off>

Auto: When the camera is placed upside down the image is automatically mirrored. Use this setting with cameras that can be mounted upside down, and that can auto detect that the camera is mounted upside down.

On: Set to On to see the selfview in mirror mode, e.g. the selfview is reversed and the experience of selfview is as seeing yourself in a mirror.

Off: Set to Off to see the selfview in normal mode, e.g. the experience of selfview is as seeing yourself as other people see you.

```
Example: Cameras Camera 1 Mirror: Off
```

Cameras Camera [1..1] Whitebalance Level

Specify which camera to control. Define the Whitebalance Level for the camera. Requires the Whitebalance Mode to be set to manual.

Valuespace: <1..16>

Select a value between 1 and 16.

```
Example: Cameras Camera 1 Whitebalance Level: 1
```

Cameras Camera [1..1] Whitebalance Mode

Define whether to control the camera whitebalance manually or to have it automatically adjusted by the system.

Valuespace: <Auto/Manual>

Auto: When set to Auto, the camera will continuously adjust the whitebalance depending on the camera view.

Manual: Set to Manual to enable manual control of the camera whitebalance, e.g. the level of the whitebalance level setting will be used for the camera.

```
Example: Cameras Camera 1 Whitebalance Mode: auto
```

The Camera settings, *cont...*

Cameras Camera [1..1] DHCP

Applies to cameras which supports DHCP, i.e the PrecsisionHD 1080p cameras. The camera must be connected to a LAN. When set, the command enables support for SW upgrade of daisy chained cameras. It will enable the camera's DHCP function and force start of MAC and IP address retrieval. Remember to reset the DHCP when the camera is no longer connected to a LAN.

Valuespace: <On/Off>

On: Set to On to enable DHCP in the camera. The camera is automatically re-booted. After re-boot the DHCP is started and the IP address will be retrieved. Run the commnand "xStatus Camera" for result.

Off: Set to Off will disable DHCP in the camera. NOTE: When camera is not connected to a LAN, this setting should be applied.

```
Example: Cameras Camera 1 DHCP: Off
```

The Conference settings

Conference [1..1] AutoAnswer Delay

Defines how long (in seconds) an incoming call has to wait before it is answered automatically by the system. Requires the Autoanswer Mode to be enabled.

Valuespace: <0..50>

Range: 0-50 seconds

```
Example: Conference 1 AutoAnswer Delay: 0
```

Conference [1..1] AutoAnswer Mode

The Autoanswer setting determines whether an incoming call is put through automatically or manually.

Valuespace: <On/Off>

On: The system will automatically answer all incoming calls.

Off: All incoming call must be answered manually by pressing the OK key or the green Call key on the remote control.

```
Example: Conference 1 AutoAnswer Mode: Off
```

The Conference settings, *cont...*

Conference [1..1] AutoAnswer Mute

The Autoanswer Mute setting determines whether the microphone is muted when an incoming call is automatically answered.

Valuespace: <On/Off>

On: The incoming call will be muted when automatically answered.

Off: The incoming call will not be muted.

```
Example: Conference 1 AutoAnswer Mute: Off
```

Conference [1..1] MicUnmuteOnDisconnect

The MicUnmuteOnDisconnect setting determines if the microphones should be automatically unmuted when all calls are disconnected. In a meeting room or other shared resource this could be done to prepare the system for the next user.

Valuespace: <On/Off>

On: Microphones will be unmuted when all calls are disconnected

Off: Microphones will not be unmuted when all calls are disconnected

```
Example: Conference 1 MicUnmuteOnDisconnect: On
```

Conference [1..1] DoNotDisturb Mode

The Do Not Disturb setting determines whether or not there should be an alert on incoming calls.

Valuespace: <On/Off>

On: Set to On when you want no alert to incoming calls. The calling side will receive a busy signal when trying to call the codec.

Off: This is the default setting. The DoNotDisturb is automatically turned Off if the codec receives any IR signal from the handheld remote control.

```
Example: DoNotDisturb Mode: Off
```

Conference [1..1] FarEndControl Mode

Lets you decide if the remote side (far end) should be allowed to select your video sources and control your local camera (pan, tilt, zoom).

Valuespace: <On/Off>

On: Set to On when you want the far end to be able to select your video sources and control your local camera (pan, tilt, zoom). You will still be able to control your camera and select your video sources as normal.

Off: When set to Off the far end can not access any of the features above on your system.

```
Example: Conference 1 FarEndControl Mode: On
```

The Conference settings, *cont...*

Conference [1..1] Encryption Mode

In Point to point calls (BestEffort mode): If the far end system supports encryption (AES-128), the call will be encrypted. If not, the call will proceed without encryption.

In MultiSite calls (BestEffort mode): In order to have encrypted MultiSite conferences, all sites must support encryption. If not, the conference will be unencrypted.

Icons on screen: A padlock with the text "Encryption On" displays on screen, for a few seconds, when the conference starts.

Valuespace: <Off/On/BestEffort>

BestEffort: The system will use encryption whenever possible.

On: The system will only allow calls that are encrypted.

Off: The system will not use encryption.

```
Example: Conference 1 Encryption Mode: BestEffort
```

Conference [1..1] DefaultCall Protocol

Specify the Default Call Protocol to be used when placing calls from the system. The call protocol can also be defined directly for each call when setting up a call.

Valuespace: <H323/SIP>

H.323: Select H.323 to ensure that calls are set up as a H.323 calls.

SIP: Select SIP to ensure that calls are set up as a SIP calls.

```
Example: Conference 1 DefaultCall Protocol: H323
```

Conference [1..1] DefaultCall Rate

Specify the Default Call Rate to be used when placing calls from the system. The call rate can also be defined directly for each call when setting up a call.

Valuespace: <64..6000>

Range: 64-6000 kbps

```
Example: Conference 1 DefaultCall Rate: 768
```

The Conference settings, *cont...*

Conference [1..1] VideoBandwidth Mode

In "Dynamic" mode the available transmit bandwidth for the video channels is distributed among the currently active channels. This means that the main video channels will use the bandwidth of the presentation channel, if there is no active presentation. In "Static" mode the bandwidth is assigned to each video channel even if it is not active.

Valuespace: <Dynamic/Static>

Dynamic: The available transmit bandwidth for the video channels are distributed among the currently active channels.

Static: The available transmit bandwidth is assigned to each video channel, even if it is not active.

```
Example: Conference 1 VideoBandwidth Mode: Dynamic
```

Conference [1..1] VideoBandwidth MainChannel Weight

The available transmit video bandwidth is distributed on the main channel and presentation channel according to "MainChannel Weight" and "PresentationChannel Weight". If the main channel weight is 2 and the presentation channel weight is 1, then the main channel will use twice as much bandwidth as the presentation channel.

Valuespace: <1..10>

Select a value between 1 and 10.

```
Example: Conference 1 VideoBandwidth MainChannel Weight: 5
```

Conference [1..1] VideoBandwidth PresentationChannel Weight

The available transmit video bandwidth is distributed on the main channel and presentation channel according to "MainChannel Weight" and "PresentationChannel Weight". If the main channel weight is 2 and the presentation channel weight is 1, then the main channel will use twice as much bandwidth as the presentation channel.

Valuespace: <1..10>

Select a value between 1 and 10.

```
Example: Conference 1 VideoBandwidth PresentationChannel Weight: 5
```

The H323 Profile settings

H323 Profile [1..1] Authentication LoginName

The system sends the Authentication Login Name and the Authentication Password to a H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Gatekeeper Authentication Mode to be enabled.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: H323 Profile 1 Authentication LoginName: ""
```

H323 Profile [1..1] Authentication Password

The system sends the Authentication Login Name and the Authentication Password to a H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Gatekeeper Authentication Mode to be enabled.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: H323 Profile 1 Authentication Password:
```

H323 Profile [1..1] Authentication Mode

Set the authentication mode.

Valuespace: <On/Off>

On: If the H.323 Gatekeeper Authentication Mode is set to On and a H.323 Gatekeeper indicates that it requires authentication, the system will try to authenticate itself to the gatekeeper. Requires the Authentication ID and Authentication Password to be defined on both the codec and the Gatekeeper.

Off: If the H.323 Gatekeeper Authentication Mode is set to Off the system will not try to authenticate itself to a H.323 Gatekeeper, but will still try a normal registration.

```
Example: H323 Profile 1 Authentication Mode: Off
```

The H323 Profile settings, *cont...*

H323 Profile [1..1] CallSetup Mode

The H.323 Call Setup Mode defines whether to use a Gatekeeper or Direct calling when establishing H323 calls.

NOTE! Direct H.323 calls can be made even though the H.323 Call Setup Mode is set to Gatekeeper.

Valuespace: <Direct/Gatekeeper>

Direct: An IP-address must be used when dialling in order to make the H323 call.

Gatekeeper: The system will use a Gatekeeper to make a H.323 call. When selecting this option the H323 Profile Gatekeeper Address and H323 Profile Gatekeeper Discovery settings must also be configured.

```
Example: H323 Profile 1 CallSetup Mode: Gatekeeper
```

H323 Profile [1..1] Gatekeeper Address

Specifies the IP address of the Gatekeeper. Requires the H.323 Call Setup Mode to be set to Gatekeeper and the Gatekeeper Discovery to be set to Manual.

Valuespace: <S: 0, 255>

Format: String with a maximum of 255 characters.

```
Example: H323 Profile 1 Gatekeeper Address: "10.47.1.58"
```

H323 Profile [1..1] Gatekeeper Discovery

Determines how the system shall register to a H.323 Gatekeeper.

Valuespace: <Manual/Auto>

Manual: The system will use a specific Gatekeeper identified by the Gatekeeper's IP-address.

Auto: The system will automatically try to register to any available Gatekeeper. If a Gatekeeper responds to the request sent from the codec within 30 seconds this specific Gatekeeper will be used. This requires that the Gatekeeper is in auto discovery mode as well. If no Gatekeeper responds, the system will not use a Gatekeeper for making H.323 calls and hence an IP-address must be specified manually.

```
Example: H323 Profile 1 Gatekeeper Discovery: Manual
```

H323 Profile [1..1] H323Alias E164

The H.323 Alias E.164 defines the address of the system, according to the numbering plan implemented in the H.323 Gatekeeper. The E.164 alias is equivalent to a telephone number, sometimes combined with access codes.

Valuespace: <S: 0, 30>

Format: Compact string with a maximum of 30 characters. Valid characters are 0–9, * and #.

```
Example: H323 Profile 1 H323Alias E164: "90550092"
```

The H323 Profile settings, *cont...*

H323 Profile [1..1] H323Alias ID

Lets you specify the H.323 Alias ID which is used to address the system on a H.323 Gatekeeper and will be displayed in the call lists. Example: “firstname.surname@company.com”, “My H.323 Alias ID”.

Valuespace: <S: 0, 49>

Format: String with a maximum of 49 characters

```
Example: H323 Profile 1 H323Alias ID: "firstname.surname@company.com"
```

H323 Profile [1..1] PortAllocation

The H.323 Port Allocation setting affects the H.245 port numbers used for H.323 call signalling.

Valuespace: <Dynamic/Static>

Dynamic: The system will allocate which ports to use when opening a TCP connection. The reason for doing this is to avoid using the same ports for subsequent calls, as some firewalls consider this as a sign of attack. When Dynamic is selected, the H.323 ports used are from 11000 to 20999. Once 20999 is reached they restart again at 11000. For RTP and RTCP media data, the system is using UDP ports in the range 2326 to 2487. Each media channel is using two adjacent ports, ie 2330 and 2331 for RTP and RTCP respectively. The ports are automatically selected by the system within the given range. Firewall administrators should not try to deduce which ports are used when, as the allocation schema within the mentioned range may change without any further notice.

Static: When set to Static the ports are given within a static predefined range [5555–6555].

```
Example: H323 Profile 1 PortAllocation: Dynamic
```

The Network settings

Network [1..1] Assignment

Defines whether to use DHCP or Static IP assignment.

Changes to this setting requires a restart of the codec.

Valuespace: <Static/DHCP>

Static: The IP Address, Subnet Mask and Default Gateway for the system must be specified in the respective address fields.

DHCP: The system adresses are automatically assigend by the DHCP server.

```
Example: Network 1 Assignment: DHCP
```

Network [1..1] DNS Domain Name

DNS Domain Name is the default domain name suffix which is added to unqualified names.

Example: If the DNS Domain Name is “company.com” and the name to lookup is “MyVideoSystem”, this will result in the DNS lookup “MyVideoSystem.company.com”.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Network 1 DNS Domain Name: "company.com"
```

Network [1..1] DNS Server [1..5] Address

Defines the network addresses for DNS servers. Up to 5 addresses may be specified. If the network addresses are unknown, contact your administrator or Internet Service Provider.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Network 1 DNS Server 1 Address: ""
```

Network [1..1] IEEE8021X AnonymousIdentity

The 802.1X Anonymous ID string is to be used as unencrypted identity with EAP types that support different tunneled identity, like EAP-PEAP and EAP-TTLS. If set, the anonymous ID will be used for the initial (unencrypted) EAP Identity Request.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Network 1 IEEE8021X AnonymousIdentity: ""
```

The Network settings, *cont...*

Network [1..1] IEEE8021X Eap Md5

Message-Digest algorith 5. Is a Challenge Handshake Authentication Protocol that relies on a shared secret. MD5 is a Weak security. EAP - Extensible Authentication Protocol. MD5 - Message Digest Algorithm 5.

Valuespace: <On/Off>

On: The EAP-MD5 protocol is enabled. Default mode is On.

Off: The EAP-MD5 protocol is disabled.

```
Example: Network 1 IEEE8021X Eap Md5: On
```

Network [1..1] IEEE8021X Eap Peap

Protected Transport Layer Security. Developed by Microsoft, Cisco and RSA Security. Authenticates LAN clients without the need for client certificates. EAP - Extensible Authentication Protocol. PEAP - Protected Extensible Authentication Protocol.

Valuespace: <On/Off>

On: The EAP-PEAP protocol is enabled. Default mode is On.

Off: The EAP-PEAP protocol is disabled.

```
Example: Network 1 IEEE8021X Eap Peap: On
```

Network [1..1] IEEE8021X Eap TTLS

Tunneled Transport Layer Security. Developed by Funk Software and Certicom. Usually supported by Agere Systems, Proxim and Avaya. Authenticates LAN clients without the need for client certificates. EAP - Extensible Authentication Protocol. TTLS - Tunneled Transport Layer Security.

Valuespace: <On/Off>

On: The EAP-TTLS protocol is enabled. Default mode is On.

Off: The EAP-TTLS protocol is disabled.

```
Example: Network 1 IEEE8021X Eap TTLS: On
```

Network [1..1] IEEE8021X Identity

The 802.1X Identity is the user name needed for 802.1X authentication.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Network 1 IEEE8021X Identity: ""
```

The Network settings, *cont...*

Network [1..1] IEEE8021X Mode

The system may be connected to an IEEE 802.1X LAN network with a port-based network access control that is used to provide authenticated network access for Ethernet networks.

Valuespace: <On/Off>

On: The 802.1X authentication is enabled.

Off: The 802.1X authentication is disabled. Default mode is Off.

```
Example: Network 1 IEEE8021X Mode: Off
```

Network [1..1] IEEE8021X Password

The 802.1X Password is the password needed for 802.1X authentication.

Valuespace: <S: 0, 32>

Format: String with a maximum of 32 characters.

```
Example: Network 1 IEEE8021X Password: "***"
```

Network [1..1] IPv4 Address

Defines the Static IP address for the system. Only applicable if Static IP assignment is chosen.

Valuespace: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

```
Example: Network 1 IPv4 Address: "10.47.5.100"
```

Network [1..1] IPv4 Gateway

Defines the IP default gateway. Only applicable if Static IP assignment is chosen.

Valuespace: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

```
Example: Network 1 IPv4 Gateway: "10.47.5.100"
```

Network [1..1] IPv4 SubnetMask

Defines the IP subnet mask. Only applicable if Static IP assignment is chosen.

Valuespace: <S: 0, 64>

Format: Compact string with a maximum of 64 characters.

```
Example: Network 1 IPv4 SubnetMask: "255.255.255.0"
```

The Network settings, *cont...*

Network [1..1] IPv4 QoS Mode

Defines whether IP Diffserv QoS should be used. The QoS (Quality of Service) is a method which handles the priority of audio, video and data in the network. The QoS settings must be supported by the infrastructure. DiffServ (Differentiated Services) is a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying, managing network traffic and providing QoS priorities on modern IP networks.

Valuespace: <Off/Diffserv>

Off: When set to Off no QoS method is used.

Diffserv: Select Diffserv and then go to the Diffserv sub-menus (Audio, Data, Signalling and Video) to configure these settings.

```
Example: Network 1 IPv4 QoS Mode: diffserv
```

Network [1..1] IPv4 QoS Diffserv Audio

The DiffServ Audio setting is used to define which priority Audio packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Valuespace: <0..63>

Audio: A recommended value is DiffServ Code Point (DSCP) is AF41, which equals the value 34. If in doubt, contact your network administrator.

Range: 0-63

```
Example: Network 1 IPv4 QoS Diffserv Audio: 0
```

Network [1..1] IPv4 QoS Diffserv Data

The DiffServ Data setting is used to define which priority Data packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Valuespace: <0..63>

Data: A recommended value is DiffServ Code Point (DSCP) AF23, which equals the value 22. If in doubt, contact your network administrator.

Range: 0-63

```
Example: Network 1 IPv4 QoS Diffserv Data: 0
```

The Network settings, *cont...*

Network [1..1] IPv4 QoS Diffserv Signalling

The DiffServ Signalling setting is used to define which priority Signalling packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Valuespace: <0..63>

Signalling: A recommended value is DiffServ Code Point (DSCP) AF31 which equals the value 26. If in doubt, contact your network administrator.

Range: 0-63

```
Example: Network 1 IPv4 QoS Diffserv Signalling: 0
```

Network [1..1] IPv4 QoS Diffserv Video

The DiffServ Video setting is used to define which priority Video packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Valuespace: <0..63>

Video: A recommended value is DiffServ Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Range: 0-63

```
Example: Network 1 IPv4 QoS Diffserv Video: 0
```

Network [1..1] MTU

Set the ethernet MTU (Maximum Transmission Unit).

Valuespace: <400..1500>

Range: 400-1500

```
Example: Network 1 MTU: 1500
```

The Network settings, *cont...*

Network [1..1] Speed

Set the ethernet link speed.

Valuespace: <Auto/10half/10full/100half/100full/1000full>

Auto: Autonegotiate link speed.

10half: Force link to 10Mbps half-duplex.

10full: Force link to 10Mbps full-duplex.

100half: Force link to 100Mbps half-duplex.

100full: Force link to 100Mbps full-duplex.

1000full: Force link to 1Gbps full-duplex.

```
Example: Network 1 Speed: Auto
```

Network [1..1] TrafficControl Mode

Configure how video packets transmission speed shall be controlled.

Valuespace: <On/Off>

On: Transmit video packets at maximum 20Mbps. Can be used to smooth out bursts in the outgoing network traffic.

Off: Transmit video packets at link speed.

```
Example: Network 1 TrafficControl: On
```

The Network Services settings

NetworkServices Multiway Address

Set the Multiway address equal to the Conference Factory Alias, as set up on the VCS.

Multiway™ conferencing enables video endpoint users to introduce a 3rd party into an existing call. It can be used in the following situations:

1) When you want to add someone else in to your existing call.

2) When you are called by a 3rd party while already in a call and you want to include that person in the call.

Requirements: The TANDBERG Codec C20 must be running TC3.0 (or later), TANDBERG VCS version X5 (or later) and TANDBERG Codian MCU version 3.1 (or later). Endpoints invited to join the Multiway™ conference must support the H.323 routeToMC facility message if in an H.323 call, or SIP REFER message if in a SIP call.

Valuespace: <S: 0, 255>

Format: String with a maximum of 255 characters.

```
Example: NetworkServices Multiway Address: "h323:multiway@company.com"
```

NetworkServices Multiway Protocol

Set the protocol to be used.

Valuespace: <Auto/H323/SIP>

Auto: The system will select the protocol for Multiway calls.

H323: The H323 protocol will be used for Multiway calls.

SIP: The SIP protocol will be used for Multiway calls.

```
Example: NetworkServices Multiway Protocol: Auto
```

NetworkServices H323 Mode

Determines whether the system should be able to place and receive H.323 calls.

NOTE! Changes in this setting requires the codec to be restarted.

Valuespace: <On/Off>

On: Set to On to enable the possibility to place and receive H.323 calls.This is the default setting.

Off: Set to Off to disable the possibility to place and receive H.323 calls.

```
Example: NetworkServices H323 Mode: On
```

The Network Services settings, *cont...*

NetworkServices HTTP Mode

HTTP is a web-interface for system management, call management such as call transfer, diagnostics and software uploads.

Valuespace: <On/Off>

On: The HTTP protocol is enabled.

Off: The HTTP protocol is disabled.

```
Example: NetworkServices HTTP Mode: On
```

NetworkServices HTTPS Mode

HTTPS is a Web protocol that encrypts and decrypts user page requests as well as the pages that are returned by the Web server.

Valuespace: <On/Off>

On: The HTTPS protocol is enabled.

Off: The HTTPS protocol is disabled.

```
Example: NetworkServices HTTPS Mode: On
```

NetworkServices HTTPS VerifyServerCertificate

When the system connects to an external HTTPS server (like a phonebook server or an external manager), this server will present a certificate to the system to identify itself. This setting tells the system if it should verify that the certificate is signed by a trusted Certificate Authority (CA). This requires that list of trusted CA's is uploaded to the system in advance.

Valuespace: <On/Off>

On: Verify server certificates.

Off: Do not verify server certificates.

```
Example: NetworkServices HTTPS VerifyServerCertificate: Off
```

NetworkServices NTP Address

Enter the NTP Address to define the network time protocol server address. This address will be used if NTP Mode is set to Manual, or if set to Auto and no address is supplied by a DHCP server.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: NetworkServices NTP Address: "1.tandberg.pool.ntp.org"
```

The Network Services settings, *cont...*

NetworkServices NTP Mode

The Network Time Protocol (NTP) is used to synchronize the time of the system to a reference time server. The time server will subsequently be queried every 24th hour for time updates. The time will be displayed on the top of the screen. The system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers requiring H.235 authentication. The system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers that requires H.235 authentication. It is also used for timestamping Placed Calls, Missed Calls and Received Calls.

Valuespace: <Auto/Manual>

Auto: The system will use the NTP server, by which address is supplied from the DHCP server in the network. If no DHCP server is used, or the DHCP server does not provide the system with a NTP server address, the system will use the static defined NTP server address specified by the user.

Manual: The system will always use the static defined NTP server address specified by the user.

```
Example: NetworkServices NTP Mode: Manual
```

NetworkServices SIP Mode

Determines whether the system should be able to place and receive SIP calls.

NOTE! Changes in this setting requires the codec to be restarted.

Valuespace: <On/Off>

On: Set to On to enable the possibility to place and receive SIP calls.This is the default setting.

Off: Set to Off to disable the possibility to place and receive SIP calls.

```
Example: NetworkServices SIP Mode: On
```

NetworkServices SNMP CommunityName

Enter the name of the Network Services SNMP Community. SNMP Community names are used to authenticate SNMP requests. SNMP requests must have a 'password' (case sensitive) in order to receive a response from the SNMP Agent in the codec. The default password is "public". If you have the TANDBERG Management Suite (TMS) you must make sure the same SNMP Community is configured there too. Note! The SNMP Community password is case sensitive.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP CommunityName: "public"
```

The Network Services settings, *cont...*

NetworkServices SNMP Host [1..3] Address

Enter the address of up to three SNMP Managers. All traps will then be sent to the hosts listed.

The system's SNMP Agent (in the codec) responds to requests from SNMP Managers (a PC program etc.). SNMP Traps are generated by the SNMP Agent to inform the SNMP Manager about important events. Can be used to send event created messages to the SNMP agent about different events like: system reboot, system dialing, system disconnecting, MCU call, packet loss etc. Traps can be sent to multiple SNMP Trap Hosts.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: NetworkServices SNMP Host 1 Address: ""
```

NetworkServices SNMP Mode

SNMP (Simple Network Management Protocol) is used in network management systems to monitor network-attached devices (routers, servers, switches, projectors, etc) for conditions that warrant administrative attention. SNMP exposes management data in the form of variables on the managed systems, which describe the system configuration. These variables can then be queried (set to ReadOnly) and sometimes set (set to ReadWrite) by managing applications.

Valuespace: <Off/ReadOnly/ReadWrite>

Off: Set to Off when you want to disable the SNMP network service.

ReadOnly: Set to ReadOnly when you want to enable the SNMP network service for queries only.

ReadWrite: Set to ReadOnly when you want to enable the SNMP network service for both queries and commands.

```
Example: NetworkServices SNMP Mode: ReadWrite
```

NetworkServices SNMP SystemContact

Enter the name of the Network Services SNMP System Contact.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP SystemContact: ""
```

NetworkServices SNMP SystemLocation

Enter the name of the Network Services SNMP System Location.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: NetworkServices SNMP SystemLocation: ""
```

The Network Services settings, *cont...*

NetworkServices Telnet Mode

Telnet is a network protocol used on the Internet or local area network (LAN) connections.

Valuespace: <On/Off>

On: The Telnet protocol is enabled.

Off: The Telnet protocol is disabled. This is the default factory setting.

```
Example: NetworkServices Telnet Mode: Off
```

The Phonebook settings

Phonebook Server [1..5] ID

Enter a name for the external phonebook.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Phonebook Server 1 ID: ""
```

Phonebook Server [1..5] URL

Enter the address (URL) to the external phonebook server.

Valuespace: <S: 0, 255>

Format: String with a maximum of 255 characters.

```
Example: Phonebook Server 1 URL: "http://tms.company.com/tmsapi-exampleublic/
externalapi-examplehonebookapi-examplehonebook.asmx"
```

The Provisioning settings

Provisioning ExternalManager Address

Specifies the IP Address to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.

Valuespace: <S: 0, 64>

Format: String with a maximum of 64 characters.

```
Example: Provisioning ExternalManager Address: ""
```

Provisioning ExternalManager Path

Specifies the path to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.

Valuespace: <S: 0, 255>

Format: String with a maximum of 255 characters.

```
Example: Provisioning ExternalManager Path: "tmsapi-exampleublic/external/
management/SystemManagementService.asmx"
```

Provisioning ExternalManager Protocol

Determines whether or not to use secure management.

Valuespace: <HTTP/HTTPS>

HTTP: Set to HTTP to disable secure management. Requires HTTP to be enabled in the Network Services HTTP Mode setting.

HTTPS: Set to HTTPS to enable secure management. Requires HTTPS to be enabled in the Network Services HTTPS Mode setting.

```
Example: Provisioning ExternalManager Protocol: http
```

Provisioning Mode

Provides the possibility of managing the codec (endpoint) by using an external manager/management system.

Valuespace: <Off/TMS>

Off: The system will not try to register to any management system.

TMS: If set to TMS the system will try to register with a TMS server as described in Provisioning ExternalManager settings. TMS is short for TANDBERG Management System. Contact your TANDBERG representative for more information.

```
Example: Provisioning Mode: TMS
```

The Serial Port settings

SerialPort BaudRate

Specify the baud rate on the COM port (data port). The default value is 38400.

Other default parameters for the COM port are: Parity: None Databits: 8 Stopbits: 1 Flow control: None.

Valuespace: <9600/19200/38400/57600/115200>

Range: Baud rate (bps).

```
Example: SerialPort BaudRate: 38400
```

SerialPort LoginRequired

The Serial Login setting determines whether or not there should be a login when connecting to the COM port (data port).

Valuespace: <On/Off>

On: Login is required when connecting to the COM port (data port).

Off: The user can access the COM port (data port) without any login.

```
Example: SerialPort LoginRequired: On
```

The SIP Profile settings

SIP Profile [1..1] Authentication [1..1] LoginName

This is the user name part of the credentials used to authenticate towards the SIP proxy.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: SIP Profile 1 Authentication 1 LoginName: ""
```

SIP Profile [1..1] Authentication [1..1] Password

This is the password part of the credentials used to authenticate towards the SIP proxy.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: SIP Profile 1 Authentication 1 Password:
```

SIP Profile [1..1] DefaultTransport

Select the transport protocol to be used over the LAN.

Valuespace: <UDP/TCP/TLS/Auto>

UDP: The system will always use UDP as the default transport method.

TCP: The system will always use TCP as the default transport method.

TLS: The system will always use TLS as the default transport method. For TLS connections a SIP CA-list can be uploaded using the web interface. If no such CA-list is available on the system then anonymous Diffie Hellman will be used.

Auto: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.

```
Example: SIP Profile 1 DefaultTransport: Auto
```

SIP Profile [1..1] Outbound

The client initiated connections mechanism for firewall traversal, connection reuse and redundancy. The current version supports http://tools.ietf.org/html/draft-ietf-sip-outbound-20.

Valuespace: <On/Off>

On: Set up multiple outbound connections to servers in the Proxy Address list.

Off: Connect to the single proxy configured first in Proxy Address list.

```
Example: SIP Profile 1 Outbound: Off
```

The SIP Profile settings, *cont...*

SIP Profile [1..1] Proxy [1..4] Address

The Proxy Address is the manually configured address for the outbound proxy. It is possible to use a fully qualified domain name, or an IP address. The default port is 5060 for TCP and UDP but another one can be provided. If Outbound is enabled, multiple proxies can be addressed.

Valuespace: <S: 0, 255>

Format: Compact string with a maximum of 255 characters.

```
Example: SIP Profile 1 Proxy 1 Address: ""
```

SIP Profile [1..1] Proxy [1..4] Discovery

Select if the SIP Proxy address is to be obtained manually or by using Dynamic Host Configuration Protocol (DHCP).

Valuespace: <Auto/Manual>

Manual: When Manual is selected, the manually configured SIP Proxy address will be used

Auto: When Auto is selected, the SIP Proxy address is obtained using Dynamic Host Configuration Protocol (DHCP).

```
Example: SIP Profile 1 Proxy 1 Discovery: Manual
```

SIP Profile [1..1] Type

Enables SIP extensions and special behaviour for a vendor or provider.

Valuespace: <Standard/Alcatel/Avaya/Cisco/Microsoft/Nortel/Experimental/Siemens>

Standard: Should be used when registering to standard SIP proxy like OpenSer.

Alcatel: Must be used when registering to a Alcatel-Lucent OmniPCX Enterprise R7 or later.

Avaya: Must be used when registered to a Avaya Communication Manager.

Cisco: Must be used when registering to a Cisco CallManager version 5 or later.

Microsoft: Must be used when registering to a Microsoft LCS or OCS server.

Nortel: Must be used when registering to a Nortel MCS 5100 or MCS 5200 PBX.

Experimental: Can be used if auto is not working Note! This mode is for testing purposes only.

```
Example: SIP Profile 1 Type: Standard
```

SIP Profile [1..1] URI

The SIP URI or number is used to address the system. This is the URI that is registered and used by the SIP services to route inbound calls to the system. A Uniform Resource Identifier (URI) is a compact string of characters used to identify or name a resource.

Valuespace: <S: 0, 255>

Format: Compact string with a maximum of 255 characters.

```
Example: SIP Profile 1 URI: "sip:firstname.lastname@company.com"
```

The Standby settings

Standby BootAction

Decide what the system is going to do on boot.

Valuespace: <None/Preset1/Preset2/Preset3/Preset4/Preset5/Preset6/Preset7/Preset8/Preset9/Preset10/Preset11/Preset12/Preset13/Preset14/Preset15/RestoreCameraPosition/DefaultCameraPosition>

None: No action.

Preset 1..15: Activate the selected preset.

RestoreCameraPosition: Set the camera to the position it had before the last boot.

DefaultCameraPosition: Set the camera to the factory default position.

```
Example: Standby BootAction: DefaultCameraPosition
```

Standby Control

Determine whether the system should go into standby mode or not.

Valuespace: <On/Off>

On: Enter standby mode when the Standby Delay has timed out. Requires the Standby Delay to be set to an appropriate value.

Off: Not entering standby mode.

```
Example: Standby Control: On
```

Standby Delay

Define how long (in minutes) the system shall be in idle mode before it goes into standby mode. Requires the Standby Control to be enabled.

Valuespace: <1..480>

Range: 1-480 minutes

```
Example: Standby Delay: 10
```

Standby StandbyAction

NEW TC2.1 Decide what the system is going to do when going into standby mode.

Valuespace: <Noneapi-examplerivacyPosition>

None: No action.

PrivacyPosition: Turns the camera to a sideways position for privacy.

```
Example: Standby StandbyAction: PrivacyPosition
```

The Standby settings, *cont...*

Standby WakeupAction

Decide what the system is going to do when leaving standby mode.

Valuespace: <None/Preset1/Preset2/Preset3/Preset4/Preset5/Preset6/Preset7/Preset8/Preset9/Preset10/Preset11/Preset12/Preset13/Preset14/Preset15/RestoreCameraPosition/DefaultCameraPosition>

None: No action.

Preset 1..15: Activate the selected preset.

RestoreCameraPosition: Set the camera to the position it had before entering standby.

DefaultCameraPosition: Set the camera to the factory default position.

```
Example: Standby WakeupAction: RestoreCameraPosition
```

The System Unit settings

SystemUnit CallLogging Mode

Enables/disables logging of calls received or placed by the system. The call logs may then be viewed via the GUI or using the xHistory command.

Valuespace: <On/Off>

On: Enable logging.

Off: Disable logging.

```
Example: SystemUnit CallLogging Mode: On
```

SystemUnit IrSensor Mode

The System Unit IR Sensor setting determines whether the infrared receiver on the codec should be enabled or not. The IR sensor LED is located in the front of the codec and flickers when an ir signal is received from the remote control.

Valuespace: <On/Off/Auto>

On: Set to On to enable the IR sensor on the codec.

Off: Set to Off to disable the IR sensor on the codec.

Auto: The system will automatically disable the IR sensor on the codec if the IR sensor at camera is enabled. Otherwise the IR sensor on the codec will be enabled.

```
Example: SystemUnit IrSensor Mode: On
```

SystemUnit MenuLanguage

The setting is used to select the language for the GUI (Graphical User Interface).

Valuespace: <English/Norwegian/Swedish/German/French/Italian/Japanese/Russian/Spanish/Korean/Finnish/ChineseSimplified/ChineseTraditional/PortugueseBrazilian/Turkish/Polish/Danish/Dutch

Select a language for the menus on screen.

```
Example: SystemUnit MenuLanguage: English
```

SystemUnit Name

Enter a System Name to define a name of the system unit. If the H.323 Alias ID is configured on the system then this ID will be used instead of the system name. The system name will be displayed:

* When the codec is acting as an SNMP Agent.
* Towards a DHCP server.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

```
Example: SystemUnit Name: "Meeting Room Name"
```

The Time settings

Time DateFormat

Specifies the date format.

Valuespace: <DD_MM_YY/MM_DD_YY/YY_MM_DD>

DD_MM_YY: The date January 30th 2009 will be displayed: 30.01.09

MM_DD_YY: The date January 30th 2009 will be displayed: 01.30.09

YY_MM_DD: The date January 30th 2009 will be displayed: 09.01.30

```
Example: Time DateFormat: DD _ MM _ YY
```

Time TimeFormat

Specifies the time format.

Valuespace: <24H/12H>

24H: Set the time format to 24 hours.

12H: Set the time format to 12 hours.

```
Example: Time TimeFormat: 24H
```

The Time settings, *cont...*

Time Zone

Specifies the time zone where the system is located, using Windows time zone description format.

Valuespace: <GMT-12:00 (International Date Line West)/GMT-11:00 (Midway Island, Samoa)/GMT-10:00 (Hawaii)/GMT-09:00 (Alaska)/GMT-08:00 (Pacific Time (US & Canada) Tijuana)/GMT-07:00 (Arizona)/GMT-07:00 (Mountain Time (US & Canada))/GMT-07:00 (Chihuahua, La Paz, Mazatlan)/GMT-06:00 (Central America)/GMT-06:00 (Saskatchewan)/GMT-06:00 (Guadalajara, Mexico City, Monterrey)/GMT-06:00 (Central Time (US & Canada))/GMT-05:00 (Indiana (East))/GMT-05:00 (Bogota, Lima, Quito)/GMT-05:00 (Eastern Time (US & Canada))/GMT-04:30 (Caracas)/GMT-04:00 (La Paz)/GMT-04:00 (Santiago)/GMT-04:00 (Atlantic Time (Canada))/GMT-03:30 (Newfoundland)/GMT-03:00 (Buenos Aires, Georgetown)/GMT-03:00 (Greenland)/GMT-03:00 (Brasilia)/GMT-02:00 (Mid-Atlantic)/GMT-01:00 (Cape Verde Is.)/GMT-01:00 (Azores)/GMT (Casablanca, Monrovia)/GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)/GMT+01:00 (West Central Africa)/GMT+01:00 (Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna)/GMT+01:00 (Brussels, Copenhagen, Madrid, Paris)/GMT+01:00 (Sarajevo, Skopje, Warsaw, Zagreb)/GMT+01:00 (Belgrade, Bratislava, Budapest, Ljubljana, Prague)/GMT+02:00 (Harare, Pretoria)/GMT+02:00 (Jerusalem)/GMT+02:00 (Athens, Istanbul, Minsk)/GMT+02:00 (Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius)/GMT+02:00 (Cairo)/GMT+02:00 (Bucharest)/GMT+03:00 (Nairobi)/GMT+03:00 (Kuwait, Riyadh)/GMT+03:00 (Moscow, St. Petersburg, Volgograd)/GMT+03:00 (Baghdad)/GMT+03:30 (Tehran)/GMT+04:00 (Abu Dhabi, Muscat)/GMT+04:00 (Baku, Tbilisi, Yerevan)/GMT+04:30 (Kabul)/GMT+05:00 (Islamabad, Karachi, Tashkent)/GMT+05:00 (Ekaterinburg)/GMT+05:30 (Chennai, Kolkata, Mumbai, New Delhi)/GMT+05:45 (Kathmandu)/GMT+06:00 (Sri Jayawardenepura)/GMT+06:00 (Astana, Dhaka)/GMT+06:00 (Almaty, Novosibirsk)/GMT+06:30 (Rangoon)/GMT+07:00 (Bangkok, Hanoi, Jakarta)/GMT+07:00 (Krasnoyarsk)/GMT+08:00 (Perth)/GMT+08:00 (Taipei)/GMT+08:00 (Kuala Lumpur, Singapore)/GMT+08:00 (Beijing, Chongqing, Hong Kong, Urumqi)/GMT+08:00 (Irkutsk, Ulaan Bataar)/GMT+09:00 (Osaka, Sapporo, Tokyo)/GMT+09:00 (Seoul)/GMT+09:00 (Yakutsk)/GMT+09:30 (Darwin)/GMT+09:30 (Adelaide)/GMT+10:00 (Guam, Port Moresby)/GMT+10:00 (Brisbane)/GMT+10:00 (Vladivostok)/GMT+10:00 (Hobart)/GMT+10:00 (Canberra, Melbourne, Sydney)/GMT+11:00 (Magadan, Solomon Is., New Caledonia)/GMT+12:00 (Fiji, Kamchatka, Marshall Is.)/GMT+12:00 (Auckland, Wellington)/GMT+13:00 (Nuku alofa)>

Set the time zone.

```
Example: Time Zone: "GMT (Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London)"
```

The Video settings

Video DefaultPresentationSource

Define which video input source shall be used as the default presentation source (e.g. when you press the Presentation key on the remote control). The input source is configured to a video input connector.

Valuespace: <1..2>

Select between two presentation sources.

```
Example: Video DefaultPresentationSource: 2
```

Video Input DVI [2] Type

The official DVI standard supports both digital and analog signals. In most cases the default AutoDetect setting can detect whether the signal is analog RGB or digital. However, in some rare cases when DVI-I cables are used (these cables can carry both the analog and digital signals) this detection might fail. This setting makes it possible to override the AutoDetect and select the correct DVI video input.

Valuespace: <AutoDetect/Digital/AnalogRGB>

AutoDetect: Set to AutoDetect to automatically detect if the signal is analog RGB or digital.

Digital: Set to Digital to force the DVI video input to Digital when using DVI-I cables with both analog and digital pins and AutoDetect fails.

AnalogRGB: Set to AnalogRGB to force the DVI video input to AnalogRGB when using DVI-I cables with both analog and digital pins and AutoDetect fails.

```
Example: Video Input DVI 2 Type: AutoDetect
```

Video Input Source [1..2] CameraControl CameraId

Select the ID of the camera in the Visca chain that is connected to this camera source. The CameraId setting represents the camera's position in the Visca chain.

Cascaded cameras and Visca commands are described in the PrecisionHD 1080p User Guide. The user guide is found at www.tandberg.com/docs

Valuespace: <1..1>

Select the ID of the camera in the Visca chain.

```
Example: Video Input Source 1 CameraControl CameraId: 1
```

Video Input Source [1..2] CameraControl Mode

Determines whether or not the camera control should be enabled for the selected video input source.

Valuespace: <On/Off>

On: Set to On to enable camera control for the camera connected to the selected video input connector.

Off: Set to Off to disable camera control for the camera connected to the selected video input connector.

```
Example: Video Input Source 1 CameraControl Mode: On
```

The Video settings, *cont...*

Video Input Source 1 Connector

Select which video input connector to be active on connector group 1.

Valuespace: <HDMI>

HDMI: Select HDMI when you want to use the HDMI connector as input

`Example: Video Input Source 1 Connector: HDMI`

Video Input Source 2 Connector

Select which video input connector to be active on connector group 2.

Valuespace: <DVI>

DVI: Select DVI when you want to use the DVI-I connector as input.

`Example: Video Input Source 2 Connector: DVI`

Video Input Source [1..2] Name

Customizable name of the connector group. Enter the name of the video input source 1-3.

Valuespace: <S: 0, 50>

Format: String with a maximum of 50 characters.

`Example: Video Input Source 1 Name: ""`

The Video settings, *cont...*

Video Input Source [1..2] OptimalDefinition Profile

The system will automatically choose what resolution and framerate to transmit based on input resolution/framerate, available bandwidth and wether ths source is configured for motion or sharpness. For motion sources, this setting can be used to adjust how rapidly the system should increase the transmitted resolution when increasing bandwidth. For instance, if the source is a camera input is 1920x1080p60, the system will transmit 1920x720p60 at about 2.2Mb/sec and above with this setting set to normal, but will will transmit 1920x720p60 at about 1.1Mb/sec and above with this setting set to high. In general you could choose medium or high if you have good quality video inputs and good lighting conditions, while normal would give a good experience in most conditions, including not optimal lighting.

Valuespace: <Normal/Medium/High>

See Table 1: Optimal definition for systems supporting 1080p and Table 2: Optimal definition for systems supporting 720p60.

`Example: Video Input Source 1 OptimalDefinition Profile: Normal`

Table 1: Optimal definition, for systems supporting 1080p

	w288p30	*w448p30*	*w576p30*	*720p30*	*1080p30*
Normal	256kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s	2560 kbit/s
Medium	128kbit/s	384 kbit/s	512 kbit/s	768 kbit/s	1920 kbit/s
High	128kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1472 kbit/s

Table 2: Optimal definition, for systems supporting 720p60

	w144p60	*w288p60*	*w448p60*	*w576p60*	*720p60*
Normal	128kbit/s	512 kbit/s	1152 kbit/s	1472 kbit/s	2240 kbit/s
Medium	128kbit/s	384 kbit/s	768 kbit/s	1152 kbit/s	1472 kbit/s
High	128kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s

The Video settings, *cont...*

Video Input Source [1..2] OptimalDefinition Threshold60fps

For each video input, this setting tells the system the lowest resolution where it should transmit 60fps. So for all resolutions lower than this, the maximum transmitted framerate would be 30fps, while above this resolution 60fps would also be possible, if the available bandwidth is adequate.

Valuespace: <512_288/768_448/1024_576/1280_720/Never>

512_288: Set the threshold to 512x288.

768_448: Set the threshold to 768x448.

1024_576: Set the threshold to 1024x576.

1280_720: Set the threshold to 1280x720.

Never: Do not set a threshold for transmitting 60fps.

```
Example: Video Input Source 1 OptimalDefinition Threshold60fps: 1280 _ 720
```

Video Input Source [1..2] Quality

When encoding and transmitting video there will be a tradeoff between high resolution and high framerate. For some video sources it is more important to transmit high framerate than high resolution and vice versa. The Quality setting specifies whether to give priority to high frame rate or to high resolution for a given source.

Valuespace: <Motion/Sharpness>

Motion: Gives the highest possible framerate. Used when there is a need for higher frame rates, typically when a large number of participants are present or when there is a lot of motion in the picture.

Sharpness: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

```
Example: Video Input Source 1 Quality: Motion
```

Video Layout ScaleToFrame

Defines what to do if the aspect ratio of a video input source doesn't match the aspect ratio of the corresponding image frame in a composition. For example if you have a 4:3 input source (like XGA) to be displayed on a 16:9 output (like HD720).

Valuespace: <Manual/MaintainAspectRatio/StretchToFit>

Manual: If the difference in aspect ratio between the video input source and the target image frame is less than the ScaleToFrameThrshold configuration (in percent), the image is stretched to fit. Unless the system will maintain the original aspect ratio.

MaintainAspectRatio: Will maintain the aspect ratio of the input source, and fill in black in the rest of the frame (letter boxing or pillar boxing).

StretchToFit: Will stretch (horizontally or vertically) the input source to fit into the image frame.

```
Example: Video Layout ScaleToFrame: MaintainAspectRatio
```

The Video settings, *cont...*

Video Layout ScaleToFrameTreshold

Only applicable if the ScaleToFrame configuration is set to manual. If the difference in aspect ratio between the video input source and the target image frame is less than the ScaleToFrameThrshold configuration (in percent), the image is stretched to fit. Unless the system will maintain the original aspect ratio.

Valuespace: <0..100>

Range: Select a value from 0 to 100 percent.

```
Example: Video Layout ScaleToFrameTreshold: 5
```

Video Layout Scaling

Defines whether the system should automatically adjust aspect ratio for images or frames when it differs between the image and the frame it is to be placed in.

Valuespace: <On/Off>

On: Let the system automatically adjust aspect ratio.

Off: Do not do any aspect ratio changes automatically.

```
Example: Video Layout Scaling: On
```

Video MainVideoSource

Define which video input source shall be used as the main video source. The input source is configured to a video input connector.

Valuespace: <1..2>

Range: Select one of the two video sources.

```
Example: Video MainVideoSource: 1
```

Video Monitors

The codec can be used with more than one monitor and this setting lets you set the codec's monitor layout mode to Single or Dual.

Valuespace: <Single/Dual/DualPresentationOnly>

Single: The same layout is shown on all monitors.

Dual: The layout is distributed on two monitors.

DualPresentationOnly: All participants in the call will be shown on the first monitr, while the presentation (if any) will be shown on the second monitor.

```
Example: Video Monitors: Single
```

The Video settings, *cont...*

Video OSD InputMethod InputLanguage

The codec can be enabled for Cyrillic input characters in the GUI (Graphical User Interface). NOTE: Requires that Video OSD inputMethod Cyrillic is set to On.

Valuespace: <Latin/Cyrillic>

Latin: Latin characters can be entered when using the remote control (default setting).

Cyrillic characters can be entered using the remote control. NOTE: Requires a TANDBERG Remote Control TRC5 with Cyrillic fonts.

```
Example: Video OSD InputMethod InputLanguage: Latin
```

Video OSD InputMethod Cyrillic

This configuration is used to hide or show the Cyrillic mode as menu input language in the GUI (Graphical User Interface).

Valuespace: <On/Off>

On: Cyrillic mode is available as a menu input language in the GUI. This will enable the setting Video OSD InputMethod InputLanguage.

Off: Cyrillic mode is NOT available as a menu input language in the GUI.

```
Example: Video OSD InputMethod Cyrillic: Off
```

Video OSD Mode

The Video OSD (On Screen Display) Mode lets you define whether or not information and icons on screen should be displayed.

Valuespace: <On/Off>

On: Set to On to display the on screen menus, icons and indicators.

Off: Set to Off to hide the on screen menus, icons and indicators.

```
Example: Video OSD Mode: On
```

Video OSD Output

The Video OSD (On Screen Display) Output lets you define which monitor should display the on screen menus, information and icons. By default the OSD output is displayed on the first monitor.

If you have a single monitor and you cannot see any OSD on the monitor: If the OSD output has been set to the second monitor and the second monitor is not connected, then you cannot see any menus, information or icons on the screen. To move the OSD output to the first monitor press the following shortcut sequence on the remote control. Press the Disconnect key followed by: * # * # 0 x # (where x is output 1 or 2).

Valuespace: <1..2>

Range: Select 1 for HDMI 1 output, or select 2 for HDMI 2 output.

```
Example: Video OSD Output: 1
```

The Video settings, *cont...*

Video OSD TodaysBookings

This setting can be used to display the systems bookings for today on the main OSD menu. This requires that the system is bookable by an external booking system, like TMS (TANDBERG Management Suite).

Valuespace: <On/Off>

On: Displays information about this systems bookings on screen.

Off: Do not display todays bookings.

```
Example: Video OSD TodaysBookings: Off
```

Video Output HDMI [1..2] MonitorRole

The monitor role describes what video stream will be shown on the monitor connected to the output connector. Applicable only if the “Video > Monitors” configuration is set to dual.

Valuespace: <First/Second/PresentationOnly>

First: Show main video stream.

Second: Show presentation video stream if active, or other participants.

PresentationOnly: Show presentation video stream if active, and nothing else.

```
Example: Video Output HDMI 1 MonitorRole: First
```

Video Output HDMI [1] OverscanLevel

Some TV’s or other monitors may not display the whole image sent out on the systems video output, but cuts the outer parts of the image. In this case this setting can be used to let the system not use the outer parts of video resolution. Both the video and the OSD menu will be scaled in this case.

Valuespace: <Medium/High/None>

Medium: The system will not use the outer 3% of the output resolution.

High: The system will not use the outer 6% of the output resolution

None: The system will use all of the output resolution.

```
Example: Video Output HDMI 1 OverscanLevel: None
```

The Video settings, *cont...*

Video Output HDMI [1..2] Resolution

Select the preferred resolution for the monitor connected to HDMI video output. This will force the selected resolution on the monitor.

Valuespace: <Auto/640_480_60/800_600_60/1024_768_60/1280_1024_60/1280_720_60/1920_1080_60/1280_768_60/1360_768_60/1366_768_60/1600_1200_60/1920_1200_60>

Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.

Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1920x1080@60p, 1280x768@60p, 1360x768@60p, 1366x768@60p, 1600x1200@60p, 1920x1200@60p

```
Example: Video Output HDMI 1 Resolution: 1920 _ 1080 _ 60
```

Video Selfview

The Video Selfview setting determines whether or not the main video source (selfview) should be displayed on screen.

Valuespace: <On/Off>

On: Set to On when you want selfview to be displayed on screen.

Off: Set to Off when you do not want selfview to be displayed on screen.

```
Example: Video Selfview: On
```

Video WallPaper

The Video Wallpaper setting determines whether or not a background picture should be displayed on screen when idle.

Valuespace: <None/Growing/Summersky/Custom>

None: Set to None if you do not want a wallpaper to be displayed on screen.

Summersky, Growing: Select the wallpaper to be displayed on screen.

Custom: The custom wallpaper is uploaded from the web interface. Open a web browser and enter the IP address of the codec. Select “Wallpaper” from the menu on top of the screen. Browse for the file and press the “Upload” button. Toggle once between “None” and “Custom” wallpaper to make the change take effect. See the Appendices section for further details about the web interface.

```
Example: Video Wallpaper: Summersky
```

The Experimental menu

The Advanced configurations menu has an option called Experimental. The settings within this menu can be used ‘as is’ and will not be documented. NOTE! The Experimenal menu WILL change.

Experimental CapsetFilter

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <S: 0, 32>

```
Example: Experimental CapsetFilter: ""
```

Experimental Conference [1..1] PacketLossResilience

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <On/Off>

```
Example: Experimental Conference 1 PacketLossResilience: Off
```

Experimental CustomSoftbuttons State [1..2] Softbutton [1..5] Type

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <NotSet/MainSourceapi-exampleresentationSource/CameraPreset/Actions/SpeedDial>

```
Example: Experimental CustomSoftbuttons State 1 Softbutton 1 Type: NotSet
```

Experimental CustomSoftbuttons State [1..2] Softbutton [1..5] Value

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <S: 0, 255>

```
Example: Experimental CustomSoftbuttons State 1 Softbutton 1 Value: ""
```

The Experimental menu, *cont...*

Experimental SoftwareUpgrade Mode

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <Auto/Manual>

```
Example: Experimental SoftwareUpgrade Mode: Auto
```

Experimental SoftwareUpgrade ServerAddress

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <S: 0, 255>

```
Example: Experimental SoftwareUpgrade ServerAddress: "http://csupdate.
tandberg.com/getswlist.py"
```

Experimental UserInterfaces OSD PhonebookMerged

The Experimental settings can be used ‘as is’ and will not be further documented. NOTE: The Experimental settings WILL change.

Valuespace: <On/Off>

```
Example: Experimental UserInterfaces OSD PhonebookMerged: Off
```

Chapter 3

Password protection

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Password protection

The system can be password protected in three ways:

- The Advanced menu can be password protected with a menu password.
- The Codec can be password protected with an administrator password.
- The Web interface is password protected with the same administrator password as for the codec. NOTE! Requires a reboot of the codec.

NOTE! When a new password has been defined make sure you save a copy of the password in a safe place. Contact your TANDBERG representative if you have forgotten the password.

Setting the codec administrator password

To define the administrator password on the codec:

1. Connect to the codec through the network or the serial data port, using a command line interface (ssh, telnet or scp)
2. Log in to the codec with user name (admin) and no password.
3. Run the following API command and enter a password:
   `xCommand SystemUnit AdminPassword Set Password: "*****"`
4. The password format is a string with 0–255 characters.
5. **Reboot** the codec.

Password protection of the web interface

The web interface is password protected with the same user name and password as defined for the codec.

NOTE! To activate the administrator password on the web interface, after having defined or changed the administrator password, a reboot of the codec is required. Without a reboot the administrator password will only apply when you log in to the codec.

Log in to the codec or the web interface

- You can log in to the codec with the user name and password, either from a web interface or from a command line interface. You will need to enter both the user name and password.
- The user name is admin, and cannot be changed.

How to deactivate the administrator password

1. Connect to the codec through the network, using a command line interface (ssh, telnet or scp).
2. Login to the codec with the required user name (admin) and password.
3. Run the following API command with a blank password:
   `xCommand SystemUnit AdminPassword Set Password: ""`
4. **Reboot** the codec.

Setting the menu password

To define a password for the Advanced menus:

1. In the on-screen menu, go to ***Home*** > ***Settings*** > ***Advanced*** > ***Set menu password***.
2. The password is a string with 0–255 characters.
3. Enter the new password in the ***Set password*** menu
4. Press ***Save***.

Log in to the Advanced menu

When a password is set, the password is required to get access to the Advanced menu on screen.

How to change the menu password

1. To change the password, go to ***Home*** > ***Settings*** > ***Advanced*** > ***Set menu password***.
2. Enter the new password in the ***Set password*** menu
3. Press ***Save***.

How to deactivate the menu password

1. To deactivate the password, go to ***Home*** > ***Settings*** > ***Advanced*** > ***Set menu password***.
2. Leave the input field empty in the ***Set password*** menu.
3. Press ***Save*** to save the blank password. This will deactivate the menu password.

Chapter 4

About monitors

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About monitors when you have a Codec C20

Connecting the monitor

The monitor can be connected to video output HDMI 1 (default) or HDMI 2*. The default resolution for HDMI is 1280x720@60Hz.

Connecting to HDMI 1

When connecting the monitor to HDMI 1, which is the default video output on Codec C20, the menu, icons and other information on screen (OSD - on screen display) will be displayed on this monitor.

Connecting to HDMI 2

When connecting the monitor to HDMI 2* output on Codec C20 the menus and icons is not automatically displayed on screen. The OSD must be moved to this output by running a key sequence on the remote control.

NOTE! There is no audio on HDMI 2.

Moving the OSD using the remote control

When connecting the main monitor to the HDMI 2 output, you must move the OSD to this output. If you cannot see any menu on screen you must run a key sequence on the remote control. The menu on screen, icons and other information (OSD - on screen display) will be moved to the selected output.

Check which connector the monitor is connected to, and run the following key sequence on the remote control.

- Disconnect * # * # 0 **x** # x=1 (HDMI 1) x=2 (HDMI 2)

Example 1: Set HDMI 1 as the OSD output:

– * – # – * – # – 0 – 1 – #

Example 2: Set HDMI 2 as the OSD output:

– * – # – * – # – 0 – 2 – #

* Use of HDMI 2 requires the Dual Display option.

The video outputs at Codec C20

Dual monitors

NOTE! Requires the Dual Display option.

When you want to run a dual monitor setup, connect the main monitor to video output HDMI 1 and the second monitor to video output HDMI 2 on Codec C20.

Dual monitor configuration

Go to Advanced settings to set the monitor to dual:

1. Navigate to Settings > Advanced > Advanced settings > Video > Output > Monitor and set the Monitor to Dual.

Chapter 5

Appendices

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Optimal Definition Profiles

Under ideal lighting conditions the bandwidth requirements can be substantial reduced with the optimal definitions profiles.

Generally, we recommend the Optimal Definition set at Normal.

If lighting condition is conducive TANDBERG recommends that you test the endpoint on the various Optimal Definition setting prior to implementation.

To set the optimal definition profile

- Go to: Settings > Advanced > Advanced settings > Video > Input > Source [1..n] > OptimalDefinition > Profile
- Go to: Settings > Advanced > Advanced settings > Video > Input > Source [1..n] > OptimalDefinition > Threshold60fps

The Camera settings must be set to Motion to ensure the Optimal Definition to work. With the Camera settings set to Sharpness, the endpoint will transmit the highest resolution possible, regardless of frames per second.

To set the camera settings:

- Go to: Settings > Advanced > Advanced settings > Camera.

High (720p60)

Typically used in dedicated video conferencing rooms. Requires good lighting conditions for a good overall experience.

Under ideal conditions the bandwidth requirements can be reduced by up to 50%.

Medium (w576p60)

Typically used in rooms with better than normal, and consistent lighting.

The bandwidth requirements can be reduced by up to 25%.

Normal (w448p60)

This setting is typically used in office environments where the environment is normal to poorly lit.

Generally, we recommend the Optimal Definition set at Normal.

Optimal definition profiles for systems supporting 1080p					
30fps	***w288p30***	***w448p30***	***w576p30***	***720p30***	***1080p30***
Normal	256kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s	2560 kbit/s
Medium	128kbit/s	384 kbit/s	512 kbit/s	768 kbit/s	1920 kbit/s
High	128kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1472 kbit/s

Optimal definition profiles for systems supporting 720p60					
60fps	***w144p60***	***w288p60***	***w448p60***	***w576p60***	***720p60***
Normal	128kbit/s	512 kbit/s	1152 kbit/s	1472 kbit/s	2240 kbit/s
Medium	128kbit/s	384 kbit/s	768 kbit/s	1152 kbit/s	1472 kbit/s
High	128kbit/s	256 kbit/s	512 kbit/s	768 kbit/s	1152 kbit/s

Codec C20–The physical interface

The front panel LEDs

The LED in front of the codec indicates the status of the codec.

- When the LED is **OFF** the codec is Off.
- The LED **flashes** green during the boot up and shut down of the codec.
- The LED **pulses** green when the infrared (IR) port is activated. This will occur when the remote control is in use.
- The LED is **steady** green when the codec is On, in Standby mode or in Presentation mode.
- When the LED is **red** this indicates an Error has occurred.

Codec C20–The physical interface, *continued...*

The rear panel

The TANDBERG Quick Set C20/C20plus physical interface is described in this guide.

The connectors used in a basic setup are highlighted in **orange**.

Kensington lock

Mic 1	Mic 2	Audio input	Audio output	Cooling fan	Network	USB (for future use)	Camera control port	PC input	Cooling fan	Camera	Main monitor	Second monitor	Power socket	Power switch
Mini jack 3,5 mm	Mini jack 3,5 mm	2 x RCA	2 x RCA		RJ45		RS-232	DVI-I input		HDMI input	HDMI 1 output	HDMI 2 output		

Microphone 1–2

Mini-Jack 3.5mm, 4-pole connector. Connect the microphone to Mic 1, which is the main connector.

Audio input

RCA sockets, mixed to mono. Used when connecting to PC and external playback devices, such as VCR's or DVD players.

Audio output

RCA sockets, mono. Used when connecting to a local loudspeaker system.

Network connector

Ethernet interface, 1 × 10Mb/100Mb/1Gigabit Ethernet LAN (RJ-45 Jack) interface.

USB

For future use.

Camera Control port

Camera Control (RS-232) port for power and camera control (pan, tilt, zoom) using the VISCA™* protocol. The Pin No. 4 on the Camera Control port provides 12 V DC / 1 A to the main camera.

DVI-I input for PC

DVI-I socket, digital/analog video input for PC presentations.

HDMI input for camera

HDMI socket, digital video input for camera.

HDMI output for the main monitor

HDMI socket, digital video and audio output for the main monitor.

HDMI output for the second monitor

HDMI socket, digital video output for the second monitor.

Power socket

The power socket accepts +12V / 5A (max) from the external adapter.

The external adapter accepts 100/240V 50/60Hz and the maximal load is 75W.

Power switch

The power switch (push button) is located on the rear side.

- Push the button to boot up the codec.
- Push and hold the button for 1 second to shut down the codec.
- Push and hold the button for 7 seconds to force a shut down of the codec.

Kensington lock

The Kensington lock may be used to prevent the codec to be moved from its place or to prevent theft.

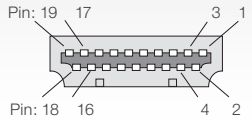
*VISCA™ is a trademark of Sony Corporation

Pin-out schemes

This page gives an overview of the pin-out schemes for C20.

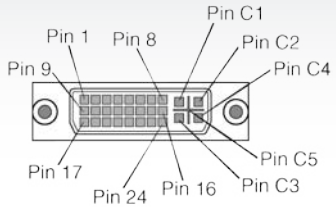
HDMI pin-out

External view of socket



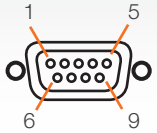
DVI-I pin-out

External view of socket

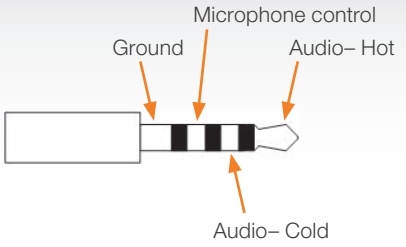


RS232 9 pin D-SUB pin-out

External view of socket



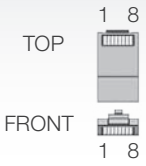
Microphone, 3.5 mm Mini-Jack, 4 pole



RCA pin-out

External view of socket

RJ-45 Connector pin-out



Wiring diagram standard cable

1 ---------- 1
2 ---------- 2
3 ---------- 3
6 ---------- 6

Pin-out—VISCA™ camera control

RJ11, 8 pins shielded modular jack

Pin	*Signal name*
8	+12V (presence 2.8mA current source when connected in daisy chain)
7	GND
6	TXD (out)
5	NC (no connect)
4	NC (no connect)
3	RXD (in)
2	GND
1	+12V

HDMI Pin-out

Pin	*Assignment*	*Pin*	*Assignment*
1	T.M.D.S. Data 2+	11	T.M.D.S. Clock Shield
2	T.M.D.S. Data 2 Shield	12	T.M.D.S. Clock–
3	T.M.D.S. Data 2–	13	CEC
4	T.M.D.S. Data 1	14	Reserved (N.C. on device)
5	T.M.D.S. Data 1 Shield	15	SCL
6	T.M.D.S. Data 1–	16	SDA
7	T.M.D.S. Data 0	17	DDC/CEC Ground
8	T.M.D.S. Data 0 Shield	18	+5 V Power (max 50 mA)
9	T.M.D.S. Data 0–	19	Hot Plug Detect
10	T.M.D.S. Clock+		

Pin-out—TANDBERG camera cable

Signal name	*RJ-45 pin*		*D-SUB pin*
+12V DC	1	Twisted pair	4
GND	2		5
RX	3	Twisted pair	2
TX	6		3
NC	4	Twisted pair	1
NC	5		6
GND	7	Twisted pair	5
+12V DC	8		4

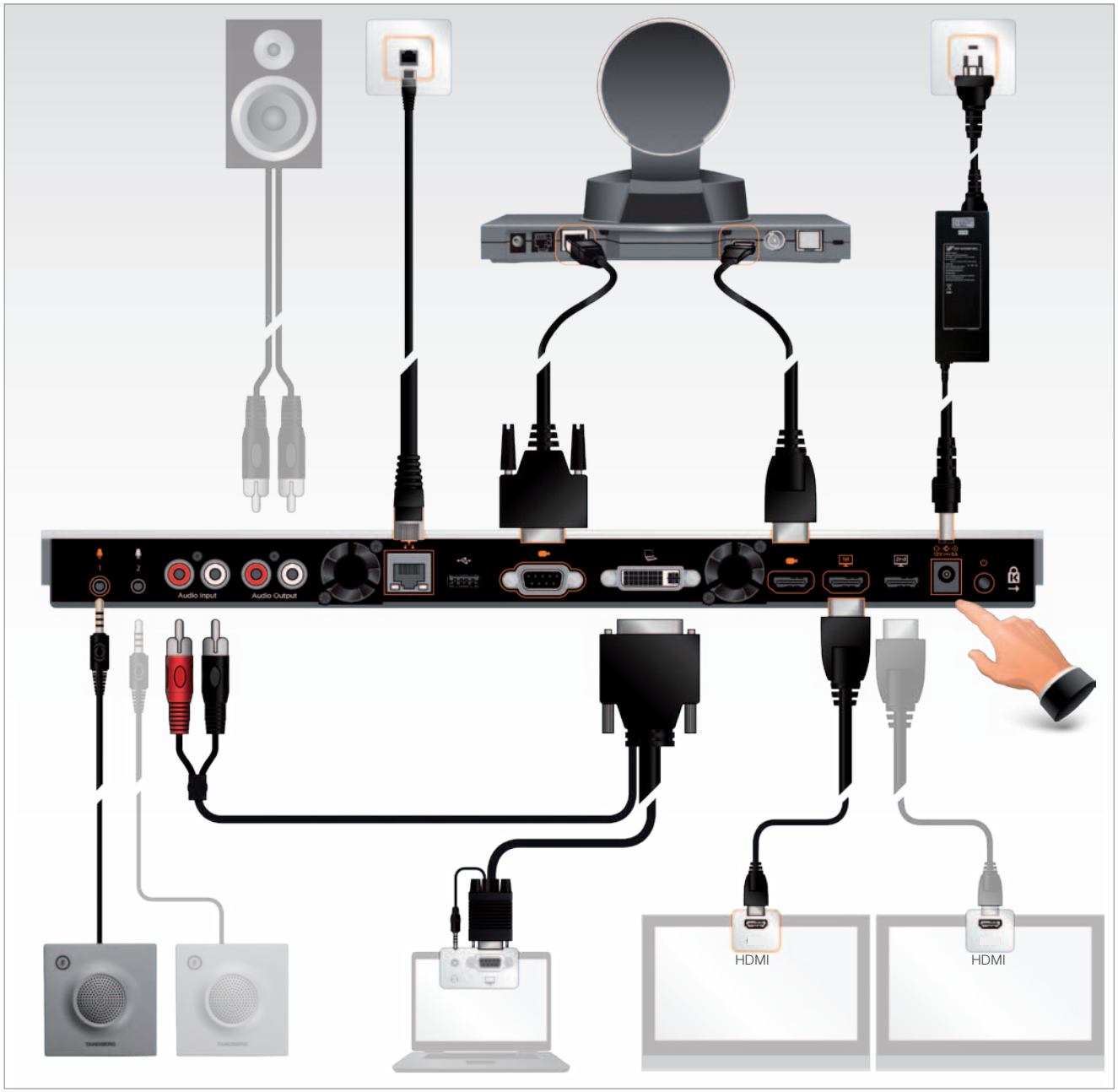
Codec C20 audio connectors

	Jack Mic input	*RCA line input*	*RCA line output*
Connector pin out	Tip = Hot Ring 1 = Cold Ring 2 = Mic. control Shield = GND	Pin = Signal Shield = GND	Pin = Signal Shield = GND
Signal type	Balanced	Unbalanced	Unbalanced
Connector (codec)	Mini Jack 3.5mm	Female RCA/phono	Female RCA/phono
Input impedance	1.5k Ohm/leg	18k Ohm	
Output impedance			100 Ohm
Maximum input level	-18.3dBu +/-2dB	9.0dBu +/-2dB	
Maximum output level			8.2dBu +/-2dB
Phantom power	12V +/-1V		
Phantom power resistor pin "tip"	1.7k Ohm		
Phantom power resistor pin "ring 1"	1.7k Ohm		
Frequency response	20Hz-20kHz +/-1dB	20Hz-20kHz +/-1dB	20Hz-20kHz +/-1dB
Signal to Noise Ratio	-85dB	-95dB	-95dB

Connecting to the Codec C20

The illustration shows you the basic setup when connecting the monitor, PC, camera, microphone, loudspeakers (if applicable), LAN and line voltage to the TANDBERG Codec C20.

CAUTION! In order to be able to use the system for video calls, all orange colored sockets must be connected.



The codec must be switched off and disconnected from the line voltage whenever connecting or disconnecting other equipment.

TANDBERG DNAM for Profile 42”

The TANDBERG DNAM – Digital Natural Audio Module – is built on two specially designed and separate modules, the amplifier and the loudspeaker cabinet.

The DNAM Loudspeaker

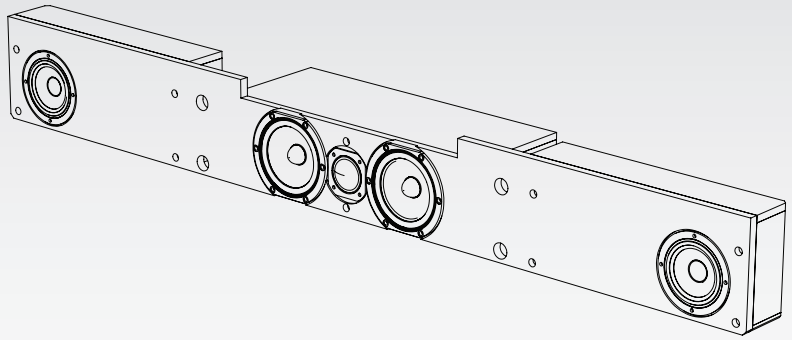
- 3-way Center Loudspeaker system
- Frequency range 50Hz - 20kHz
- 2 x 100 mm low- and midrange loudspeaker 8 Ohms nominal, excellent quality (SEAS Prestige series)
- 1 x 25mm dome tweeter, 6 ohms nominal, excellent quality
- Active crossover filtered audio signals received from DNAM amplifier
- Long time max power 70 Watt on all loudspeakers
- Enclosed MDF loudspeaker cabinet

Integrated Left / Right Stereo Loudspeaker

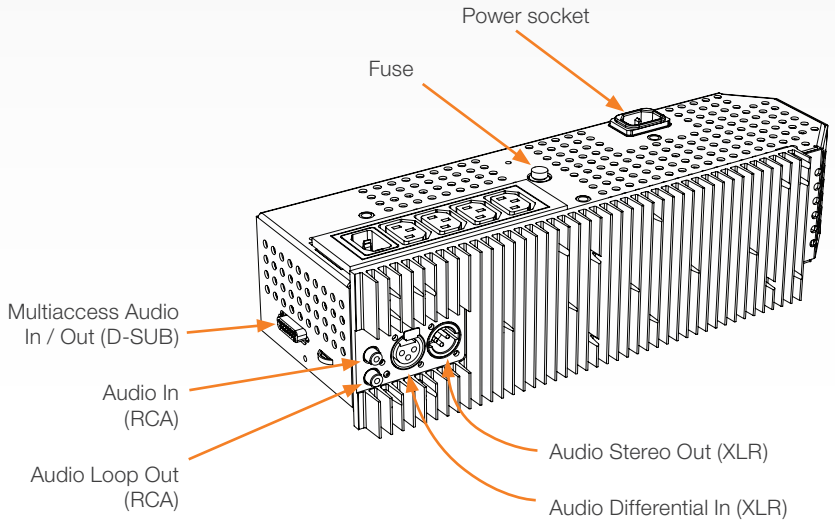
Stereo Loudspeaker System, each side has:

- 1 x 90 mm fullrange loudspeaker, 8 Ohms nominal, excellent quality
- Frequency range 70 Hz - 20 kHz
- Enclosed MDF Loudspeaker cabinet

DNAM Loudspeaker cabinet



DNAM Amplifier



The DNAM Amplifier

- 3 x 50W continuous average Center Output Power (load specified by DNAM Center Loudspeakers)
- 2 x 50W continuous average Stereo Output Power (load specified by DNAM Stereo Loudspeakers)
- Full dynamic range for audio (20Hz–20kHz)
- Digital Signal Processing and Filtering on all channels for best audio detail clarity
- Digital Crossover Filtering on center channels
- In/out:

Audio In - SPDIF (stereo) or Analog (mono), using the same connector.

Audio Differential In - (female XLR pinout: 1 - GND, 2 – Signal (+), 3 – Signal (-))

Audio Loop Out - line out directly from the input, always analog even with SPDIF in.

Audio Stereo Out - (male XLR, common GND configuration)

- Fuse 2A 250V Slow, 5 x 20mm, Littelfuse type 215002. Push and twist anti-clockvice to release.

CE Declarations

TANDBERG Quick Set C20/C20 Plus

For an official, signed version of this document, or details regarding documentation from the technical construction file, please contact TANDBERG.

EC Declaration of conformity	
MANUFACTURER:	TANDBERG Telecom AS
PRODUCT NAME:	TANDBERG Codec C20
TYPE NUMBER:	TTC7-18
DESCRIPTION:	Video Conferencing Equipment
DIRECTIVES: This equipment complies with.	LVD 2006/95/EC EMC 2004/108/EC
HARMONIZED STANDARDS: Applied in order to verify compliance with directives.	EN 60950-1:2006 EN 55022 (2006) EN 55024 (1998) + A1 (2001) + A2 (2003) EN 61000-3-2 (2006) EN 61000-3-3 (1995) + A1 (2001) + A2 (2005)
TEST REPORTS and CERTIFICATES ISSUED BY:	Reports/Certificates No.: LVD (Nemko AS) 121905 EMC (Nemko AS) E09659.00
TECHNICAL CONSTRUCTION FILE NO.:	14508
YEAR WHICH THE CE-MARK WAS AFFIXED:	2009

TANDBERG Profile using Codec C20

For an official, signed version of this document, or details regarding documentation from the technical construction file, please contact TANDBERG.

EC Declaration of conformity	
MANUFACTURER:	TANDBERG Telecom AS
PRODUCT NAME:	PROFILE 42
TYPE NUMBER:	TTC60-12
DESCRIPTION:	Video Conferencing Equipment
DIRECTIVES: This equipment complies with.	LVD 2006/95/EC EMC 2004/108/EC
HARMONIZED STANDARDS: Applied in order to verify compliance with directives.	EN 60950-1:2006 EN 55022 (2006) EN 55024 (1998) + A1 (2001) + A2 (2003) EN 61000-3-2 (2006) EN 61000-3-3 (1995) + A1 (2001) + A2 (2005)
TEST REPORTS and CERTIFICATES ISSUED BY:	Report/Certificates No: LVD (Nemko AS) 135581 EMC (Nemko AS) E09640.01
TECHNICAL CONSTRUCTION FILE NO.:	X14474 rev. 2
YEAR WHICH THE CE-MARK WAS AFFIXED:	2009

China RoHS table

This products described in this guide complies with the Chineese RoHS.

产品中有毒有害物质表

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
金属部件	X	O	O	O	O	O
印刷电路板及组件	X	O	O	O	O	O
线缆和线缆组装	X	O	O	O	O	O
显示器（包括照明灯）	X	X	O	O	O	O

说明:

O：表示该有毒有害物质在此部件所有均质材料中的含量均在中国标准《电子信息产品中有毒有害物质的限量要求》(SJ/T 11363-2006) 所规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出中国标准《电子信息产品中有毒有害物质的限量要求》(SJ/T 11363-2006) 所规定的限量要求。

注意：在所售产品中未必包含所有上述所列部件。

除非在产品上有另外特别的标注，以下标志为针对所涉及产品的环保使用期限标志。环保使用期限只适用于产品在产品手册中所规定的使用条件。

Supported RFCs in SIP

The RFC (Request for Comments) series contains technical and organizational documents about the Internet, including the technical specifications and policy documents produced by the Internet Engineering Task Force (IETF).

Current RFCs and drafts supported in SIP

- RFC 1889 RTP: A Transport Protocol for Real-time Applications
- RFC 2190 RTP Payload Format for H.263 Video Streams
- RFC 2327 SDP: Session Description Protocol
- RFC 2396 Uniform Resource Identifiers (URI): Generic Syntax
- RFC 2429 RTP Payload Format for the 1998 Version of ITU-T Rec. H.263 Video (H.263+)
- RFC 2617 Digest Authentication
- RFC 2782 DNS RR for specifying the location of services (DNS SRV)
- RFC 2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals
- RFC 2976 The SIP INFO Method
- RFC 3016 RTP Payload Format for MPEG-4 Audio/Visual Streams
- RFC 3047 RTP Payload Format for ITU-T Recommendation G.722.1
- RFC 3261 SIP: Session Initiation Protocol
- RFC 3262 Reliability of Provisional Responses in SIP
- RFC 3263 Locating SIP Servers
- RFC 3264 An Offer/Answer Model with SDP
- RFC 3311 UPDATE method
- RFC 3361 DHCP Option for SIP Servers
- RFC 3420 Internet Media Type message/sipfrag
- RFC 3515 Refer method
- RFC 3550 RTP: A Transport Protocol for Real-Time Applications
- RFC 3581 Symmetric Response Routing
- RFC 3605 RTCP attribute in SDP
- RFC 3711 The Secure Real-time Transport Protocol (SRTP)
- RFC 3840 Indicating User Agent Capabilities in SIP
- RFC 3890 A Transport Independent Bandwidth Modifier for SDP
- RFC 3891 The SIP “Replaces” Header
- RFC 3892 Referred-By Mechanism
- RFC 3960 Early Media
- RFC 3984 RTP Payload Format for H.264 Video
- RFC 4028 Session Timers in SIP
- RFC 4145 TCP-Based Media Transport in the SDP
- RFC 4568 SDP:Security Descriptions for Media Streams
- RFC 4574 The Session Description Protocol (SDP) Label Attribute
- RFC 4582 The Binary Floor Control Protocol
- RFC 4585 Extended RTP Profile for RTCP-Based Feedback
- RFC 4587 RTP Payload Format for H.261 Video Streams
- RFC 4629 RTP Payload Format for ITU-T Rec. H.263 Video
- RFC 5168 XML Schema for Media Control
- RFC 4796 The SDP Content Attribute
- RFC 4583 SDP Format for BFCP Streams
- RFC 5589: SIP Call Control Transfer
- draft-ietf-avt-rtp-h264-rcdo-02
- draft-ietf-avt-rtp-rfc3984bis-06
- draft-ietf-sip-outbound-20: Managing Client Initiated Connections

Media capabilities supported in SIP

The audio and video media capabilities supported in SIP are the same as for H.323.

Technical specifications

TANDBERG Codec C20

SET DELIVERED COMPLETE WITH:

Codec C20, PrecisionHD 1080p 4x or 12x camera, Performance Mic 20, remote control, cables and power supply

BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point

FIREWALL TRAVERSAL

TANDBERG Expressway™ Technology

H.460.18, H.460.19 Firewall Traversal

VIDEO STANDARDS

H.261, H.263, H.263+, H.264

VIDEO FEATURES

Native 16:9 Widescreen

Advanced Screen Layouts

Intelligent Video Management

Local Auto Layout

VIDEO INPUTS (2 INPUTS)

1 X HDMI input, supported formats:

1920 x 1080@60, 59.94 Hz (1080p60)
1920 x 1080@50 Hz (1080p50)
1920 x 1080@30, 29.97 Hz (1080p30)
1920 x 1080@25 Hz (1080p25)
1920 x 1080@24, 23.97 Hz (1080p24)
1920 x 1200@50 Hz (WUXGA)
1680 x 1050@60 Hz (WSXGA+)
1600 x 1200@50, 60 Hz (UXGA)
1440 X 900@60 Hz (WXGA+)
1400 x 1050@60, 75 Hz
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 1024@60, 75, 85 Hz (SXGA)
1280 x 960@60, 85 Hz
1280 x 800@60 Hz (WXGA)
1280 x 768@60, 75, 85 Hz (WXGA)
1280 x 720@60 Hz (720p60)
1280 x 720@50 Hz (720p50)
1152 x 864@75 Hz
1024 x 768@60, 70, 75, 85 Hz (XGA)
848 x 480@60 Hz (576p50)
800 x 600@56, 60, 72, 75, 85 Hz (SVGA)
720 x 576@50 Hz
720 x 480@60, 59.94 Hz (480p60)
640 x 480@60, 72, 75, 85 Hz (VGA)

1 X DVI-I input, supported formats:

Digital (DVI-D):

Same as HDMI, ref. above.

Analog RGB (DVI-A):

1920 x 1080@60 Hz (1080p60)
1920 x 1200@50 Hz (WUXGA)
1680 x 1050@60 Hz (WSXGA+)
1600 x 1200@60 Hz (UXGA)
1440 x 900@60 Hz (WXGA+)
1400 x 1050@60, 75 Hz
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 1024@60, 75, 85 Hz (SXGA)
1280 x 960@60, 85 Hz
1280 x 800@60 Hz (WXGA)
1280 x 768@60, 75, 85 Hz (WXGA)
1280 x 720@60 Hz (720p60)
1152 x 864@75 Hz
1024 x 768@60, 70, 75, 85 Hz (XGA)
848 x 480@60 Hz
800 x 600@56, 60, 72, 75, 85 Hz (SVGA)
720 x 576@50 Hz
720 x 480@60, 59.94 Hz (480p60)
640 x 480@60, 72, 75, 85 Hz (VGA)

Analog YPbPr (DVI-A):

1920 x 1080@60 Hz (1080p60)
1920 x 1080@50 Hz (1080p50)
1920 x 1080@30 Hz (1080p30)
1920 x 1080@25 Hz (1080p25)
1280 x 720@60 Hz (720p60)
1280 x 720@50 Hz (720p50)
1280 x 720@30 Hz (720p30)
720 x 576@50 Hz (576p50)
720 x 480@60 Hz (480p60)

Extended Display Identification Data (EDID)

VIDEO OUTPUTS (2 OUTPUTS)

2 X HDMI output, supported formats:

1920 x 1080@60 Hz (1080p60)
1920 x 1200@60Hz (WUXGA)
1600 x 1200@60 Hz (UXGA)
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 720@60 Hz (720p60)
1280 x 1024@60 Hz (SXGA)
1280 x 768@60 Hz (WXGA)
1024 x 768@60 Hz (XGA)
800 x 600@60 Hz (SVGA)
640 x 480@60 Hz (VGA)

VESA Monitor Power Management

LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)

176 x 144@30 fps (QCIF)
352 x 288@30 fps (CIF)
512 x 288@30 fps (w288p)
576 x 448@30 fps (448p)
768 x 448@30 fps (w448p)
704 x 576@30 fps (4CIF)
1024 x 576@30 fps (w576p)
640 x 480@30 fps (VGA)
800 x 600@30 fps (SVGA)
1024 x 768@30 fps (XGA)
1280 x 1024@30 fps (SXGA)
1280 x 720@30 fps (720p30)
1920 x 1080@30 fps (1080p30)*
1280 x 768@30 fps (WXGA)
1440 x 900@30 fps (WXGA+)
1680 x 1050@30 fps (WSXGA+)
1600 x 1200@30 fps (UXGA)
512 x 288@60 fps (w288p60)*
768 x 448@60 fps (w448p60)*
1024 x 576@60 fps (w576p60)*
1280 x 720@60 fps (720p60)*
1920x1200@20fps (WUXGA)

AUDIO STANDARDS

G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC-LD

AUDIO FEATURES

CD-Quality 20KHz Mono

1 x Acoustic Echo Canceller

Automatic Gain Control (AGC)

Automatic Noise Reduction

Active Lip Synchronization

AUDIO INPUTS (4 INPUTS)

2 x Microphone, 4 pin MiniJack

2 x RCA/Phono (mixed to mono)

AUDIO OUTPUTS (3 OUTPUTS)

2 x RCA/Phono (dual mono)

1 x HDMI, digital, main audio

DUAL STREAM

H.239 (H.323) dual stream

BFCP (SIP) dual stream

Support resolutions up to WXGA (1280 x 768)

PROTOCOLS

H.323

SIP

EMBEDDED ENCRYPTION

H.323/SIP point-to-point

Standards-based: H.235 v2 & v3 and AES

Automatic key generation and exchange

Supported in Dual Stream

IP NETWORK FEATURES

DNS lookup for service configuration

Differentiated Services (QoS)

IP adaptive bandwidth management (including flow control)

Auto gatekeeper discovery

Dynamic playout and lip-sync buffering

H.245 DTMF tones in H.323

Date and Time support via NTP

Packet Loss based Downspeeding

URI Dialing

TCP/IP

DHCP

Direct DNS dialing

802.1x network authentication

SECURITY FEATURES

Management via HTTPS and SSH

IP Administration Password

Menu Administration Password

Disable IP services

Network Settings protection

NETWORK INTERFACES

TANDBERG Codec C20, *continued...*

1 x LAN/Ethernet (RJ-45) 10/100/1000 Mbit

OTHER INTERFACES

USB host for future usage

PRECISIONHD 1080P 12X CAMERA

1/3" CMOS

12 x zoom

+15°/-25° tilt, +/- 90° pan

43.5° vertical field of view

72° horizontal field of view

Focus distance 0.3m–infinity

1920 x 1080 pixels progressive @ 60fps

Other formats supported (configurable through Dip-switch):

- 1920 x 1080@60 Hz (HDMI only)
- 1920 x 1080@50 Hz (HDMI only)
- 1920 x 1080@30 Hz
- 1920 x 1080@25 Hz
- 1280 x 720@60 Hz
- 1280 x 720@50 Hz
- 1280 x 720@30 Hz
- 1280 x 720@25 Hz

Automatic or manual focus/brightness/white balance

Far-end camera control

Dual HDMI and HD-SDI output

Upside-down mounting with automatic flipping of picture

PRECISIONHD 1080P 4X CAMERA

1/3" CMOS

4 x zoom

+15°/-25° tilt, +/- 90° pan

43.5° vertical field of view

72° horizontal field of view

Focus distance 0.3m–infinity

1920 x 1080 pixels progressive @ 30fps

Other formats supported (configurable through Dip-switch):

- 1920 x 1080@30 Hz
- 1920 x 1080@25 Hz
- 1280 x 720@30 Hz
- 1280 x 720@25 Hz

Automatic or manual focus/brightness/white balance

Far-end camera control

Dual HDMI and HD-SDI output

Upside-down mounting with automatic flipping of picture

SYSTEM MANAGEMENT

Support for the TANDBERG Management Suite

Total management via embedded SNMP, Telnet, SSH, XML, SOAP

Remote software upload: via web server, SCP, HTTP, HTTPS

Remote control and on-screen menu system

DIRECTORY SERVICES

Support for Local directories (My Contacts)

Corporate Directory

Unlimited entries using Server directory supporting LDAP and H.350

Unlimited number for Corporate directory (through TMS)

200 number local directory

Received Calls with Date and Time

Placed Calls with Date and Time

Missed Calls with Date and Time

POWER

Auto-sensing power supply

100–240 VAC, 50/60 Hz

45 watts max. for codec and main camera

OPERATING TEMPERATURE AND HUMIDITY

0° C to 35° C (32° F to 95° F) ambient temperature

10% to 90% Relative Humidity (RH)

STORAGE AND TRANSPORT TEMPERATURE

-20° C to 60° C (-4° F to 140° F) at RH 10–90% (non-condensing)

APPROVALS

Directive 2006/95/EC (Low-Voltage Directive) — Standard EN 60950-1

Directive 2004/108/EC (EMC Directive) — Standard EN 55022, Class B — Standard EN 55024 — Standard EN 61000-3-2/-3-3

Approved according to UL 60950-1 and **CAN/CSA-C22.2 No. 60950-1-07**

Complies with FCC15B **Class A**

DIMENSIONS

Codec C20:

Length: 15.35in/39.0cm

Height: 1.18in/3.0cm

Depth: 5.0in/12.7cm

WEIGHT

Codec C20:

Weight: 4.0lbs/1.8kg

All specifications are subject to change without notice, system specifics may vary.

All images in these materials are for representational purposes only, actual products may differ.

TANDBERG and Expressway are registered trademarks or trademarks of TANDBERG in the U.S. and other countries.

All other trademarks are property of their respective owners.

MTBF PRODUCT RELIABILITY/MTBF

The predicted reliability is expressed in the expected random Mean Time Between Failures (MTBF) for the electronic components based on the Power On Hours:

Power On Hours (POH) > 69 000 hours

Useful Life Cycle > 6 years

ISO 9001 certificate is available upon request

March 2010

* requires option

Technical specifications

TANDBERG Profile 42" using C20

UNIT DELIVERED COMPLETE WITH:

Full HD LCD display, Codec C20, remote control, PrecisionHD 1080p Camera, Performance Microphone 20 and choice of installation configuration: floor stand, wheel base or wall mount on pedestal.

BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point

FIREWALL TRAVERSAL

TANDBERG Expressway™ Technology
H.460.18, H.460.19 Firewall Traversal

VIDEO STANDARDS

H.261, H.263, H.263+, H.264

VIDEO FEATURES

Native 16:9 Widescreen
Advanced Screen Layouts
Intelligent Video Management
Local Auto Layout

VIDEO INPUTS (2 INPUTS)

1 X HDMI input, supported formats:
1920 x 1080@60, 59.94 Hz (1080p60)
1920 x 1080@50 Hz (1080p50)
1920 x 1080@30, 29.97 Hz (1080p30)
1920 x 1080@25 Hz (1080p25)
1920 x 1080@24, 23.97 Hz (1080p24)
1920 x 1200@50 Hz (WUXGA)
1680 x 1050@60 Hz (WSXGA+)
1600 x 1200@50, 60 Hz (UXGA)
1440 X 900@60 Hz (WXGA+)
1400 x 1050@60, 75 Hz
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 1024@60, 75, 85 Hz (SXGA)
1280 x 960@60, 85 Hz
1280 x 800@60 Hz (WXGA)
1280 x 768@60, 75, 85 Hz (WXGA)
1280 x 720@60, 59.94 Hz (720p60)
1280 x 720@50 Hz (720p50)
1152 x 864@75 Hz
1024 x 768@60, 70, 75, 85 Hz (XGA)
848 x 480@60 Hz (576p50)
800 x 600@56, 60, 72, 75, 85 Hz (SVGA)
720 x 576@50 Hz
720 x 480@60, 59.94 Hz (480p60)
640 x 480@60, 72, 75, 85 Hz (VGA)

1 X DVI-I input, supported formats:

Digital (DVI-D):
Same as HDMI, ref. above.

Analog RGB (DVI-A):
1920 x 1080@60 Hz (1080p60)
1920 x 1200@50 Hz (WUXGA)
1680 x 1050@60 Hz (WSXGA+)
1600 x 1200@60 Hz (UXGA)
1440 x 900@60 Hz (WXGA+)
1400 x 1050@60, 75 Hz
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 1024@60, 75, 85 Hz (SXGA)
1280 x 960@60, 85 Hz
1280 x 800@60 Hz (WXGA)
1280 x 768@60, 75, 85 Hz (WXGA)
1280 x 720@60 Hz (720p60)
1152 x 864@75 Hz
1024 x 768@60, 70, 75, 85 Hz (XGA)
848 x 480@60 Hz
800 x 600@56, 60, 72, 75, 85 Hz (SVGA)
720 x 576@50 Hz
720 x 480@60, 59.94 Hz (480p60)
640 x 480@60, 72, 75, 85 Hz (VGA)

Analog YPbPr (DVI-A):
1920 x 1080@60 Hz (1080p60)
1920 x 1080@50 Hz (1080p50)
1920 x 1080@30 Hz (1080p30)
1920 x 1080@25 Hz (1080p25)
1280 x 720@60 Hz (720p60)
1280 x 720@50 Hz (720p50)
1280 x 720@30 Hz (720p30)
720 x 576@50 Hz (576p50)
720 x 480@60 Hz (480p60)

Extended Display Identification Data (EDID)

VIDEO OUTPUTS (2 OUTPUTS)

2 X HDMI output, supported formats:
1920 x 1080@60 Hz (1080p60)
1920 x 1200@60Hz (WUXGA)
1600 x 1200@60 Hz (UXGA)
1366 x 768@60 Hz
1360 x 768@60 Hz
1280 x 720@60 Hz (720p60)
1280 x 1024@60 Hz (SXGA)
1280 x 768@60 Hz (WXGA)
1024 x 768@60 Hz (XGA)
800 x 600@60 Hz (SVGA)
640 x 480@60 Hz (VGA)

VESA Monitor Power Management

LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)

176 x 144@30 fps (QCIF)
352 x 288@30 fps (CIF)
512 x 288@30 fps (w288p)
576 x 448@30 fps (448p)
768 x 448@30 fps (w448p)
704 x 576@30 fps (4CIF)
1024 x 576@30 fps (w576p)
640 x 480@30 fps (VGA)
800 x 600@30 fps (SVGA)
1024 x 768@30 fps (XGA)
1280 x 1024@30 fps (SXGA)
1280 x 720@30 fps (720p30)
1920 x 1080@30 fps (1080p30)*
1280 x 768@30 fps (WXGA)
1440 x 900@30 fps (WXGA+)
1680 x 1050@30 fps (WSXGA+)
1600 x 1200@30 fps (UXGA)
512 x 288@60 fps (w288p60)*
768 x 448@60 fps (w448p60)*
1024 x 576@60 fps (w576p60)*
1280 x 720@60 fps (720p60)*
1920x1200@20fps (WUXGA)

AUDIO STANDARDS

G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC-LD

AUDIO FEATURES

CD-Quality 20KHz Mono
1 x Acoustic Echo Canceller
Automatic Gain Control (AGC)
Automatic Noise Reduction
Active Lip Synchronization

AUDIO INPUTS (4 INPUTS)

2 x Microphone, 4 pin MiniJack
2 x RCA/Phono (mixed to mono)
AUDIO OUTPUTS (3 OUTPUTS)
2 x RCA/Phono (dual mono)
1 x HDMI, digital, main audio
DUAL STREAM
H.239 (H.323) dual stream
BFCP (SIP) dual stream
Support resolutions up to WXGA (1280 x 768)

PROTOCOLS

H.323
SIP

EMBEDDED ENCRYPTION

H.323/SIP point-to-point
Standards-based: H.235 v2 & v3 and AES
Automatic key generation and exchange
Supported in Dual Stream

IP NETWORK FEATURES

DNS lookup for service configuration
Differentiated Services (QoS)
IP adaptive bandwidth management (including flow control)
Auto gatekeeper discovery
Dynamic playout and lip-sync buffering
H.245 DTMF tones in H.323
Date and Time support via NTP
Packet Loss based Downspeeding
URI Dialing
TCP/IP
DHCP
Direct DNS dialing
802.1x network authentication

SECURITY FEATURES

Management via HTTPS and SSH
IP Administration Password
Menu Administration Password
Disable IP services
Network Settings protection

NETWORK INTERFACES

1 x LAN/Ethernet (RJ-45) 10/100/1000 Mbit

TANDBERG Profile 42”/52”, *continued...*

OTHER INTERFACES

USB host for future usage

PRECISIONHD 1080P 12X CAMERA

1/3” CMOS

12 x zoom

+15°/-25° tilt, +/- 90° pan

43.5° vertical field of view

72° horizontal field of view

Focus distance 0.3m–infinity

1920 x 1080 pixels progressive @ 60fps

Other formats supported (configurable through Dip-switch):

1920 x 1080@60 Hz (HDMI only)

1920 x 1080@50 Hz (HDMI only)

1920 x 1080@30 Hz

1920 x 1080@25 Hz

1280 x 720@60 Hz

1280 x 720@50 Hz

1280 x 720@30 Hz

1280 x 720@25 Hz

Automatic or manual focus/brightness/white balance

Far-end camera control

Dual HDMI and HD-SDI output

SYSTEM MANAGEMENT

Support for the TANDBERG Management Suite

Total management via embedded SNMP, Telnet, SSH, XML, SOAP

Remote software upload: via web server, SCP, HTTP, HTTPS

Remote control and on-screen menu system

DIRECTORY SERVICES

Support for Local directories (My Contacts)

Corporate Directory

Unlimited entries using Server directory supporting LDAP and H.350

Unlimited number for Corporate directory (through TMS)

200 number local directory

Received Calls with Date and Time

Placed Calls with Date and Time

Missed Calls with Date and Time

POWER

Auto-sensing power supply

100-120/200-240 VAC, 60/50 Hz, 4.5 A max

Maximum power consumption: 390 W

OPERATING TEMPERATURE AND HUMIDITY

0° C to 35° C (32° F to 95° F) ambient temperature

10% to 90% Relative Humidity (RH)

STORAGE AND TRANSPORT TEMPERATURE

-20° C to 60° C (-4° F to 140° F) at RH 10–90% (non-condensing)

APPROVALS

Directive 2006/95/EC (Low Voltage Directive)–Standard EN 60950-1, 2ed

Directive 2004/108/EC (EMC Directive)–Standard EN 55022, Class A– Standard EN 55024– Standard EN 61000-3-2/-3-3

Approved according to UL 60950-1 and CSA 60950-1-07

Complies with FCC15B Class A

DIMENSIONS

Height: 63.78” / 162 cm

Width: 38.58” / 98 cm

Depth: 6.7” / 17 cm

WEIGHT

Weight: 202.8 lbs / 92 kg

All specifications are subject to change without notice, system specifics may vary.

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MTBF PRODUCT RELIABILITY/MTBF

The predicted reliability is expressed in the expected random Mean Time Between Failures (MTBF) for the electronic components based on the Power On Hours:

Power On Hours (POH) > 69 000 hours

Useful Life Cycle > 6 years

ISO 9001 certificate is available upon request

March 2010

* requires option

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